



## DOCTOR OF EDUCATION (EDD)

### Working Towards Institutional Change

### An Investigation of the Transformations and Learning in a Further Education College Merger Project Team in Barbados

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**WORKING TOWARDS INSTITUTIONAL CHANGE - AN INVESTIGATION OF THE  
TRANSFORMATIONS AND LEARNING IN A FURTHER EDUCATION COLLEGE  
MERGER PROJECT TEAM IN BARBADOS**

Chesterfield St. Clair Browne

A thesis submitted for the degree of Doctor of Education

**University of Bath**  
Department of Education  
January 2011

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## **DECLARATION OF AUTHENTICITY OF THE THESIS**

I hereby declare that this thesis, submitted in partial fulfilment of the requirements for the degree of Doctor of Education, contains no material previously published or written in any medium by another person, except where appropriate reference has been made.

.....  
Chesterfield St. Clair Browne

## ACKNOWLEDGEMENTS

**“No man is an Island, entire of itself; every man is a piece of the Continent, a part of the main” - John Donne’s Meditation XVII (1624).**

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## **ABSTRACT**

This study examined the work practices of a project team that was engaged in the implementation of shared services at three tertiary level educational institutions in Barbados. Using Activity Theory as the underpinning theoretical framework, the researcher employed Development Work Research (DWR) and the Engestromian Change Labs to reveal the tensions and contradictions that occurred in the project team's work environment. The intent was to reframe their understanding of the work practices from the everyday to the scientific, and develop new work practices to generate organisational change. The study also explored the expansive transformation that took place during the intervention process.

The aim of the study was to answer the following question:

In what ways, if any, did changes in the work practices of a project team contribute to changes in the planning and implementation of shared services in three Barbadian educational institutions?

The research found that there were ruptures and disturbances in the work environment. These were attributed to the historically bureaucratic practices of Government which impacted negatively on the project team by impeding the development of innovative practices. The DWR intervention resulted in the resolution of the contradictions and led to effective change and expansive learning in the staff as well as a change in the approach to the implementation strategies that were being used by the project team.

The team was able through dialogue and debate in the Change Labs to create a new form of practice which involved a new communication strategy and model. The new practice was used to overcome the challenge of providing timely and effective communication with the stakeholder institutions with which they were working to implement the shared services.

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## **ABBREVIATIONS**

**BCC** - Barbados Community College

**BEC** - Barbados Employers' Confederation

**CHAT** - Cultural Historical Activity Theory

**DWR** – Development Work Research

**EdD** - Doctor of Education

**ETTC** - Erdiston teachers' College

**GDP** - Gross Domestic Product

**HEDU** - Higher Educational Development Unit

**HE** - Higher Education

**HCI** - Human Computer Interaction

**ICT** – Information Communication Technology

**SDA** - Systems Database Administrator

**SIDS** - Small Island Developing State

**SJPP** - Samuel Jackman Prescod Polytechnic

**ZPD** - Zone of Proximal Development

## GLOSSARY OF TERMS

**Barbados Employers' Confederation** - This is an employers' organisation which promotes the interest of employers in Barbados. It consults with government on proposed changes to employment legislation, and lobbies for necessary changes to improve social and labour practices.

**Caribbean** -. The term is used to refer to the English speaking Caribbean islands that touch the Caribbean Sea. These islands are former British colonies.

**Constructivist Theory** - This theory proposes the centrality of the individual to the learning experience. It speaks to the individuality of the learning experience with the learner constructing and engaging with the learning experience. In this context the learner is not a passive participant in the learning exercise but an active being who engages with that experience in a personal and meaningful way.

**Development Work Research (DWR)** - DWR is an interventionist methodology that is used to study expansive learning in the workplace.

**Gross Domestic Product** - This is the total monetary value of all the goods and services that are produced locally by a country.

**Human Computer Interaction (HCI)** - HCI is the study of the interaction between human beings and computer systems. Its theoretical base is an amalgam between Computer Science the behavioural sciences and design technology.

**NVIVO** – This is qualitative data analysis software which is used to organize and structure qualitative research data (document, surveys, audio video and pictures).

**Small Island Developing State** - Presently, there is no formal definition for Small Island States but the World Bank Report 2000 data indicates that most SIDS have populations of less than 1.5 million people and GNP per capita ranging from \$340.00 US to \$10 000. In addition, these states have small land sizes, small economies which are vulnerable to external economic shocks. Small Island developing states are also vulnerable to natural disasters like hurricanes, floods and rising sea levels.<sup>1</sup>

**University College** – The term as used in this thesis refers to an institution which offers both associate and undergraduate degrees along the lines of the Canadian model of University Colleges which offer college-diplomas and undergraduate degrees.

**White Paper** – In the Barbadian context, a white paper refers to a government report which contains newly framed government policies and plans for future implementation.

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<sup>1</sup> GNP per capita for SIDS in 1998. Source: Small Island: States: Meeting Challenges in the Global Economy. Report of the Commonwealth Secretariat/ World Bank Joint Task Force on SIDS, Washington DC and London, April 2000

## PART I

**The only thing constant within organisations is the continual change of these organisations. W.J.L. Elving (2005)<sup>2</sup>**

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<sup>2</sup> **ELVING, W.J.L., 2005.** The Role of Communication in organisational change. *Corporate Communications: An International Journal* Vol. 10, No. 2. p.129-138

## **CHAPTER 1 INTRODUCTION AND CONTEXT**

### **1.1 Introduction**

This study examines the planning activity of a project team that was engaged in the implementation of shared services at three Barbadian tertiary level educational institutions and explores the tensions and contradictions experienced by the planners as they engaged in an examination of their work practices in the context of an interventionist paradigm that made use of the Change Lab (Engestrom, 2001, 2007). The study draws on Cultural Historical Activity Theory (CHAT) with the goal of working with the project team in order to enhance its work practices and devise strategies aimed at easing the difficult job of implementing shared services across clearly defined and established boundaries.

This chapter serves to provide a personal biography of the researcher, set the educational, institutional and economic context for the study and provide a professional and historical profile of the project team which will be the subject of the study. In addition, the chapter explores the question of what kind of theory is suitable for a study of this nature. The objective is to provide the basis for justifying in the next chapter why and in what ways the work of the project team constitutes an activity system based on an initial argument for the adoption of activity theory as the theoretical framework.

### **1.2 Personal Biography and Position**

The dissertation marks the culmination of a journey that encapsulates self-discovery, academic enquiry and professional development. Its outcome has been the emergence of an understanding of the principles of Activity Theory and a very deep appreciation for this exceptionally powerful social theory.

The journey has been one in which my personal biography mirrors the changes that have occurred in social and educational theory. My journey began in 1981 when, as a student teacher, I subscribed to the theory of behaviourism; the behaviourist account was prominent at that time. In the nineties, the focus of educational theory shifted to the constructivist paradigm and after careful reflection on the constructivist theory, I switched to being a proponent of constructivism; this was a very clear educational paradigm shift.

At the start of the century, a new era emerged in the field of education with the emphasis being placed on research in the area of sociocultural Activity Theory. The outcome was an increase in scholarly works describing the social nature of learning. The power and relevance of this theory resonated in my own psyche and I gradually began to embrace this new and powerful educational account.

The final transformation occurred in 2003, when I was engaged in a Human Computer Interface (HCI) related search that led to the website of the University of the Helsinki Center for Activity Theory and Developmental Work Research. The information on Activity Theory formed the concepts in my mind in a real and meaningful way and I subsequently set out on a journey of research in Activity Theory.

An opportunity to explore Activity Theory in an academic context and use it as a framework for studying organisational behaviour and change, presented itself in 2001, when the Government of Barbados reached a policy decision to merge three tertiary level educational institutions<sup>3</sup>. Given that the Barbadian setting is culturally unique, the proposed merger made possible an opportunity to engage in the study of the sociocultural influences that affect the planning for a merger and their impact on organisational change in a postcolonial Small Island Developing State (SIDS). I have alluded to the cultural uniqueness of Barbados given that it has developed a postcolonial independent culture steeped in British tradition being the only British Caribbean colony that did change hands with the French or the Spanish. Contemporary Barbadian culture is evolving rapidly under the heavy influence of North American culture.

The journey from a research perspective has also been quite interesting and exciting given the twists and turns of the project, which have been brought about by the changes in the Barbadian political landscape and the resulting policy shifts. An interesting occurrence has been the many changes in the office of Minister of Education. There have been five Ministers and one change in government in the course of the past seven years with each minister bringing a different level of commitment and leadership to the project and in some instances, a different philosophical approach. In addition, the roadmap and form of the merger were revised based on changes in the political landscape and the concomitant change

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<sup>3</sup> For this study, I shall be interchanging the terms institution with organisation

in government policy. A critical juncture in the history of this project occurred when the project changed radically from planning and implementing a full merger to the implementation of shared services with the merger being postponed until a future date. The issues surrounding these changes will be discussed later in this chapter.

At the start of this research project, it is important that I make clear any personal position and beliefs since these can contribute to bias, which may negatively affect the study. I have been an employee of the Samuel Jackman Prescod Polytechnic for the past fifteen years, ten of which were spent as an instructor and five as the head of the Information Technology Department. The news of the proposed merger and later the shared services initiative engendered in me a hope of better things to come for the staff of the colleges. I never considered the idea that the human issues inclusive of work practices would be critical. This was based on my assumption that the project office team and the Trade Unions would ensure that the human issues were addressed.

The literature on the subject of research states that is not possible to be totally free from bias (Creswell 1992; Somekh 1993; and, Denscombe 2002) and therefore, the researcher has to take great care in ensuring that data collection processes and the interpretation of that data limit bias or qualitative terms ensure the accuracy of the research account. I have taken great care to ensure that accuracy of the account would be a governing factor in this study given my employment at one of the colleges. The issue will receive greater attention in Chapter 3.

### **1.3 Government's role in the Barbadian educational landscape**

Barbados is a Small Island Developing State (SIDS), which is situated in the eastern Caribbean. It has earned a positive international reputation for excellent governance, stable economic and fiscal management, free and fair elections and the development of a quality system of education which is offered free to citizens from the nursery to the university level.

In 2006, the island was ranked 37 out of 179 countries<sup>4</sup> on the United Nations (UN) development index. This is a great achievement for an island with no natural resources. The shortfall in natural resources has been mitigated largely because successive governments

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<sup>4</sup> Source [http://hdrstats.undp.org/2008/countries/country\\_fact\\_sheets/cty\\_fs\\_BRB.html](http://hdrstats.undp.org/2008/countries/country_fact_sheets/cty_fs_BRB.html) accessed 6<sup>th</sup> March 2009



have been singular in their focus on the provision of high quality education for the citizens. The outcome has been the creation of a highly educated and trainable workforce that drives the productivity of the country in the major areas of tourism, financial services, manufacturing and agriculture. Figures from the Central Bank of Barbados<sup>5</sup>, 2004, indicate that education spending amounted to 6.5 percent of the Gross Domestic Product (GDP). This figure represents a very broad view since GDP refers to the percentage of the total output of goods and services. Statistics from the Ministry of Education and Human Resource Development show that in real terms the spending on education in 2004 amounted to 16.48% of the total public expenditure. This level of expenditure on education has remained reasonably stable with spending being placed at 15.67% of the public purse in 2007.<sup>6</sup>

Government's strategic approach to management of the economy has led to some challenges. One such challenge is that Barbados has become a victim of its own success in the area of education. The island's educational success has forged a path of development, which has contributed significantly to the country's growth educationally, economically and socially. The resulting high human development index ranking has led to the **"graduation"** of Barbados by the United Nations (UN). This means that the island is no longer able to access preferential loans and grants from UN agencies and must try to retain its level of spending on education by accessing loans on the commercial market at very high interest rates. The Rt. Hon. Owen S. Arthur (2004, p. 4) Prime Minister of Barbados, voiced concern about the situation in a parliamentary debate by noting:

We have had also to come to terms, since 1998, with the reality of being graduated from borrowing on concessional terms from a traditionally important lending agency, and having to source much of our financing for development on the commercial, international market – and all that goes with it.

The result is that all projects including those in education are quite costly. Consequently, there has been increasing pressure to earn enough foreign exchange to service the high interest debt repayment. A deleterious effect of this state of affairs has been the burden placed on future generations to repay the loans. A critical question that the education authorities sought to address was the level of the island's return on investment in education especially at the post-secondary and higher education levels given the high cost. The

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<sup>5</sup> Speech by the Governor of the Central Bank of Barbados. Available from... [http://www.centralbank.org.bb/publications/Speech\\_7dec2004.pdf](http://www.centralbank.org.bb/publications/Speech_7dec2004.pdf) Accessed 5<sup>th</sup> May, 2007

<sup>6</sup> Ministry of Education and Human Resource Development Estimates Debate Document 2009-2010

challenge during the last ten years has been the realisation of maximum returns on a sector in which spending is increasing on an annual basis. In reviewing its policies on education in the national strategic plan of 2005 – 2025 (by which time Barbados is expected to reach “developed nation status”), the government decided to introduce a new policy which would lead to rationalisation of post-secondary education.

Rationalisation would ensure the maximum utilisation of national, financial, physical and human resources in the most efficient and cost effective way possible by educating the maximum number of students at the lowest operational cost. In 2002, a decision was taken by the then government to enter into a project that would start the process of rationalisation of operations at three tertiary educational institutions namely, the Barbados Community College (BCC), the Samuel Jackman Prescod Polytechnic (SJPP) and the Erdiston Teachers’ Training College (ETTC).

The intended result would be a more efficient and cost effective delivery of education to more students. Table 1.1 compares the annual budgets of the institutions and their student populations in 2003 at the start of the project. The figures show that for a total enrolment of 6 902 students at the three institutions, the government’s expenditure was \$50 602 390.00 (BBD)<sup>7</sup>. In the context of a small open economy the aforementioned figures represent a large expenditure.

Discussions in Barbadian education circles on the level of return on investments in education and the value for money received from tertiary education engendered a belief that more could be achieved through a process of rationalisation in the area of spending. The expected solution would be the creation of a new entity, the University College of Barbados (UCB) which was expected to provide access to a greater number of students at a reduced cost.

*Table 1.1 Student enrolment and annual budgets for 2003<sup>8</sup>*

<b><i>INSTITUTION</i></b>	<b><i>STUDENT ENROLLMENT</i></b>	<b><i>ANNUAL BUDGET (BBD)</i></b>
<b><i>Barbados Community College</i></b>	<b><i>3 697</i></b>	<b><i>\$33 457 283</i></b>
<b><i>Samuel Jackman Prescod Polytechnic</i></b>	<b><i>2 972</i></b>	<b><i>\$13 360 740</i></b>
<b><i>Erdiston Teachers’ Training College</i></b>	<b><i>223</i></b>	<b><i>\$3 784 367</i></b>

<sup>7</sup> Barbados Dollars

<sup>8</sup> Sources Barbados Socio-Economic Data 2008 Pocket Statistics Vol. 9

The preparation for the merger officially commenced on July 01, 2002 with the opening of a project office. Government's brief to the planners was to create a plan that would facilitate the successful merger of the three institutions with a minimum of dislocation of staff. The lead person on the project, a Ministry of Education Project Officer, began the planning along with a senior project officer, three project officers with responsibilities for different areas of the project and, one administrative assistant who was responsible for managing day-to-day office activities. The Ministry of Education also set up seven sub committees and two task forces comprising of 87 persons with mandates to investigate the feasibility of various areas of the merger and make recommendations for structure and governance of the new institution. The Government of Barbados UCB Business Plan, (2003, p. 4) indicated that the creation of the UCB was a response to the need to:

- Increase access to world-class education
- Respond in a proactive manner to the demand for existing programmes
- Improve on obsolete and deteriorating facilities
- Upgrade programmes, curricula and services

The above listed factors among others, informed the government's decision to reform tertiary level education. Government stated its intent in the White Paper on education (1995) and produced a detailed plan in the national strategic plan 2005-2025.

Reports from the project committees were submitted to the project office in February 2003 and a project master plan was developed and circulated to the various stakeholders for their examination and comment. Included in the stakeholders were the government cabinet, the trade unions, academic and administrative staff, management of the institutions and selected private sector organisations like the Barbados Employers' Confederation (BEC). The master plan was approved after several rounds of discussion and the process of preparing for the implementation of the merger began in earnest.

When projects involve government-funded institutions, they are often subject to the exigencies of the given political environment; such was the case in the proposed merger when a change in government in January 2008 resulted in a change of pace for the project implementation and the deferral of the project deadline. A new emphasis led to a change in the status of the project team; that emphasis would be the implementation of shared services at the three colleges in the interim.

The new Minister of Education expressed a commitment to the process of merging the institutions but indicated that the merger deadline would be postponed by two years to August 2010. The project office was renamed the Higher Education Development Unit (HEDU) and formally provided with a new mandate of facilitating shared services in Accounting, Student Information System, Library Services and Online Learning among the three institutions.

The HEDU continued its work under the new mandate. It has presided over the implementation and introduction of a single accounting system, the implementation of a single student information system as well as shared library services. At the time of writing, the implementation of the student information system was at an advanced stage of planning with the commencement of implementation slated for July 2010.

It must be noted that even though the focus moved from a full merger to the implementation of shared services, the institutional landscapes remained the same. The focus of the planning office staff of the HEDU changed from planning and implementing a merger to providing cross institutional collaboration in the area of shared services. As such the project team was still engaged in working to introduce major change in the three organisations. In essence they were still crossing the strong institutional boundaries and introducing elements in the institutional environments that were likely to provoke some form of resistance to the change.

#### **1.4 Description of the Institutional Context**

In the introduction, it was stated that the rationalisation of tertiary level education in Barbados was expected to result in the amalgamation of three government-financed tertiary level educational institutions. It is important at this stage that I examine the institutional context in which the services were being implemented and discuss some of the issues surrounding the team's work in an effort to be true to the historical account.

The Samuel Jackman Prescod Polytechnic (**SJPP**) is a technical vocational institution which offers certificates and diplomas; the Erdiston Teachers' Training College (**ETTC**) confers certificates and diplomas in education in conjunction with the University of the West Indies; and the Barbados Community College (**BCC**), offers degrees, diplomas and certificates.

SJPP and BCC are forty years old while ETTC is sixty years old at the time of writing. The introduction of shared services at these longstanding Barbadian institutions would create an arrangement where the institutions would still maintain their institutional autonomy but would have to collaborate with each other and with HEDU to ensure the smooth operation of the shared services applications.

The three institutions currently operate under different legislative frameworks and employ different governance structures and operational practices that have evolved over their years of existence. Prior to the announcement of the planned merger the institutions pursued different strategic plans as they sought to provide tertiary level education to Barbados' citizens in their respective niches in the Barbadian educational setting.

A Board of Management selected by the Minister of Education, governs the Barbados Community College; it has been invested with a level of autonomy that permits the operation of the college with little interference from the Ministry of Education and Human Resource Development (**MEHRD**). SJPP and Erdiston College are also governed by Boards of Management but do not possess the same level of autonomy and may be more directly influenced by the MEHRD in their day-to-day operations.

Each institution over time has successfully charted different strategic directions that were expected to meet the island's needs in the areas of technical and vocational education and academic education. This state of affairs and the differences in operation created a project environment in which there were clearly defined boundaries at the organisational and cultural levels, strong institutional identities and limited institution-to-institution interaction.

## **1.5 History of the project team**

The focus of the study was the planning team and at this juncture of the study is important that in this account I explore the structure of the team which was engaging with the merger and which would have to transition to working on the introduction of the shared services.

The project office staff did not consist of hired private contractors but employees of the Ministry of Education and Human Resource Development who possessed a rich and diverse history at the personal, academic and professional level. The team included a psychologist who worked in the United States of America (USA) in Higher Education, a senior

administrative officer who worked locally in higher education, two project officers – one who previously worked in providing student financing and a second project officer who spent five years in the USA in student support in higher education. In addition, the professionals brought multiple perspectives into the planning landscape; these perspectives would have been shaped by their various personal and professional experiences which accumulated over time as they worked in pursuit of their professional goals.

The team brought many years of collective professional experience to the initial project and developed working practices and synergies among themselves which permitted the development of team work that was also necessary for the success of the shared services project. At the time of writing the team had accumulated a total of five years of professional experience working on being facilitators of the merger/shared services<sup>9</sup> initiative of the Ministry of Education. The structure of the team and the division of labour formed the basis of engagement with the shared services project and was useful in assisting the team as it worked on achieving the new goals of the shared services endeavour.

On examination of the project team structure what was revealed was a group of professionals who were engaging with each other and the personnel of three colleges in an environment which was very fluid and driven by changes to their reality based on the changing political environment. The team experienced frequent changes in leadership at the political and departmental level, vacillation by some leaders at the policy level, sudden bursts in impetus by others, and the tensions brought about by the conflict between their professional beliefs and the existing work landscape which was subject to rapid and unexpected change.

## **1.6 What kind of Theory?**

The preceding paragraph highlights the dynamic environment in which the project team operated. Their primary focus was on the transformation of existing business systems at the given institutions through the adoption of shared services applications. The study researched the experience of a team comprised of individuals working in a situation in which there was rapidly changing social circumstances. The question which must be the focus at this stage is

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<sup>9</sup> This term is used in view of the fact that the project started as a merger, moved to shared services and was expected to revert to merger at a later date

what kind of theory can be utilised to engage with the tensions and ruptures that occurred in the given environment?

The answer was that a theory was required which had the potential to resolve the issues resulting from the contradictions experienced by the project team and track over a given time the transformation of the team of persons and the systems with which they interacted. The theory would give rise to a methodology that permitted an intervention and which allowed the team to reveal to themselves the underlying ruptures that would lead to personal and organisational change as they engaged in their problem solving activities.

There were many possible approaches for studying the problem at hand. Among them were distributed cognition, situated learning, and cultural-historical activity theory. Daniels (2001, p. 68) noted that these approaches study cognition in context by using “non-deterministic, non-reductionist theories”. He further noted that the commonality among them is that they use the Vygotskian theory as a tool for investigating and understanding “social processes of the social formation of the mind”.

Distributed cognition speaks to the social nature of learning in two areas. In the first instance, it seeks to explore and understand the cognitive processes based on the functional relationships between the elements that form the relationship. The basic unit of analysis is the individual. The literature on the issue points out that distributed cognition moves beyond the traditional manipulations of symbols within an individual to a broader class of cognitive events. Based on the previous statement a number of principles emerge when one engages in the study of distributed cognition. According to Nardi (2001),

- Cognitive processes may be distributed across a number of interacting persons and artifacts.
- Distributed cognition emphasises the distinction between internal and external structures and the changes that are encountered.
- Processes may be distributed through time with the outcome of earlier events impacting on and transforming the nature of later events.

Nardi (2001) cited the works of Flor and Hutchins (1991) to support the idea that distributed cognition is also concerned with:

understanding the coordination among individuals and artifacts, that is to understand how individual agents align and share within a distributed process.

It must be noted that distributed cognition involves more than the distribution of processes across a group but includes the group members and their interactions with other people as well as with their environment.

Situated cognition presents the view that learning is social and context specific. Brown, Collins and Duguid (1989, p. 33) pointed out that concepts are situated and developed through activity. They also include the use of tools as an important part of the process of the acquisition of knowledge in the given context. In fact, they note that knowledge should be thought of as a tool and in this view the use of tools makes for:

an increasingly rich and implicit understanding of the world and the tools themselves. The understanding of the world and the tool continually changes as a result of their interaction.

They further explained that learning occurs in a lifelong context and is the result of “acting in situations”.

According to Lave and Wenger situated learning provides a way for studying people acting in specific contexts to solve problems. Daniels (2001) cites Lenke (1997, p. 8) who notes that the reports of studies of situated learning contexts are of:

people functioning in micro-ecologies, material environments endowed with cultural meanings; acting and being acted on directly or with the mediation of physical-cultural tools and cultural-material systems of words, signs and other symbolic values.

The unit of analysis as Lave (1988) cited in Nardi (2001, p. 71) is, “the activity of persons – acting in setting”. Nardi further noted that it was not limited to either the individual or the setting but rather the relationship between the two entities. The work of Lave and Wenger on situated learning has moved on to the development of the idea of communities of practices which engages with a “shared set of experiences, resources, tools and problem solving techniques” (Wenger et al, 2002. p. 4). The theory and ideas surrounding communities of practices will be explored in detail in a subsequent section of the next chapter.



Distributed cognition emphasises the representation of knowledge, its propagation and the transformation of knowledge based on the interaction of people and artifacts. The unit of analysis is the system of human being and artifacts with a concentration on the analysis of the construction coordination among the components while the unit of analysis of situated learning is concerned the relationship between the environment and the individual.

The aforementioned approaches are applicable for studying a range of situations given that their focus is concerned with human activity as a catalyst for learning. Activity theory provides a framework which allows one to engage with the complexity of studying human activity in context. Engestrom (1999, p. 20) spoke to the richness of human activity when he stated:

Human activity is endlessly multifaceted, mobile, and rich in variations of content and form. It is perfectly understandable and probably necessary that the theory of activity should reflect that richness and mobility.

He further pointed out the potential contribution of activity theory to the study on cultural practices and practice-bound cognition. Activity theory as a powerful social theory allows one to study teams and systems in context as evidenced in the work of Engestrom (2008) and Daniels et al (2001, 2007b) among others.

Activity Theory provides a unit of analysis which engages with the idea of the consciousness that surrounds activity. It studies activity by examining the people (subjects), their objects and the various actions and operations which form part of the activity system to which the person belongs. Activity theory is also concerned with mediation by tools, the internal and external aspects of the interactions and the transformations which occur in the systems. The analysis provides a means of working in complex landscapes with multiple interacting components in which activity is the framework for the actions. In addition, the Engestrom's analysis of activity theory draws on its Vygotskian roots to employ double stimulation as a tool to facilitate the problem solving in an interventionist context. The concepts of intervention and double stimulation will be discussed in detail in chapter 2.

## **1.7 Embracing Activity Theory**

In the introductory paragraph, I indicated that this study provided the opportunity for me to engage with Activity theory while in the previous section I outlined its usefulness as the

theory that would permit an engagement with the problem that was being investigated. At this point of the discussion it is necessary to provide a definition of activity theory and to further indicate how it is suitable for exploring the experience of the project team as they worked with the implementation of shared services across the three Barbadian tertiary level institutions.

When taken at face value the term Activity Theory can be misleading. It is not a theory in the strict scientific sense but rather a set of principles that are used as the basis for exploring and understanding activity and its relation to consciousness in human society Engestrom (1999a, 1999b, 2001).

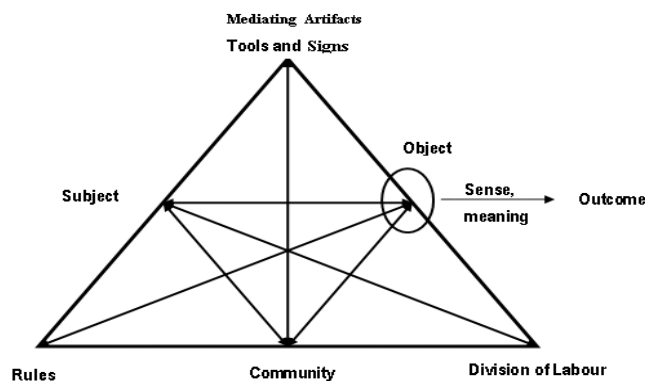
Nardi (1996, p. 7) also supported the above view by stating that the “Activity Theory is a powerful and clarifying descriptive tool rather than a strongly predictive theory”. She argued that it seeks to understand the unity of consciousness and activity; it has been applied to the human quest to solve problems in society in the following way. When problems occur in any social system, they create disequilibrium in that system. Thus, human agents (**subjects**) within the system are propelled to reach a solution to the particular problem (**object**). The solution is reached through mediation by tools (**artifacts**) in a community setting. A set of cultural norms (**rules**) and a **division of labour** govern the activities and use of tools. According to Prenkert (2006, p. 473), the underpinning basis of the study of Activity Theory is grounded in the idea that:

human collective activity and individual mental processes are inescapably dependent on the social context of any given individual.

The relationships of the components listed in the previous paragraph constitute an activity system. It is not unusual for there to be the existence of multiple goals at the personal and professional level but it is the common goal which defines the activity system. The concept of the common or shared goal is an important aspect of this the enquiry which will be discussed in the next chapter.

Activity Theory has a very interesting history and in the next chapter, I shall explore historical origins of the theory, and trace its development up to modern times and provide support as to why and how it is applicable to this study. Figure 1.1 is a representation of a

second generation activity system. This type of activity system will be discussed in detail in the next chapter.



*Figure 1.1 Diagrammatic representation of an Activity System (Engestrom, 2001)*

The above figure shows the complexity of an activity system and the various relationships that are possible among the different components. Close examination of figure 1.1 reveals that the system can be reduced into a number of triadic relations which include – tool→ subject→object; and subject→community→object among others. Further discussion on the historical development of activity systems and its application to the context being studied in this project will ensue in the next chapter.

## 1.8 Statement of the problem

The three colleges with which the planning team was engaging were structurally different and the staff working in them was very much embedded within the structures and boundaries of the colleges. This impacted on the ability of the team to carry out their assignment given the location of the team in an external entity namely the HEDU. The investigation centered on how the team was acting as it engaged with the three institutions. The aim of the investigation was work with the project team to reveal the underlying contradictions in the work practices of the project team given that these were invisible and not easily articulated by the staff in scientific way. This would be achieved by revealing and clarifying the objects on which the team was working, in order to reach outcomes that would result in improved work practices.

Such contradictions would only become visible by working with the team so that they would reveal the contradictions to themselves based on an approach that provided them with the

tools to do so. What Activity Theory provided was a set of analytical tools with which to examine the rules, division of labour and community and examine those areas in relation to what the facilitating team was doing while trying to achieve their common objects. This would be achieved through the use of the process of double stimulation based on Vygotsky's work and executed through the Development Work Research (DWR) methodology which will be discussed in the next chapter.

The challenges which occurred in the planning for the implementation of shared services spanned the historical, social and cultural worlds of the planning staff of HEDU. Consequently, the project office personnel needed to be aware of the sociocultural environment with which they were engaging and devise suitable strategies for achieving success. This necessitated the development of work practices that would allow the HEDU project planning department to facilitate the introduction of shared services in a complex environment and manage the potential challenges in a Barbadian setting. Given the history and structure of the team and the intended outcome of introducing the shared services in a very challenging environment, this enquiry focussed on the following problem:

**In what ways, if any, did changes in the work practices of a project planning group contribute to changes in the planning and implementation of shared services in three Barbadian educational institutions after engagement with a Development Work Research intervention?**

- Q1.** What were the changes in work practices that occurred in the planning group after engagement with Development Work research?
- Q2.** What were the tensions and contradictions experienced by the planning team and in what ways, if any, did professional historical practices contribute to the contradictions?
- Q3.** How did the contradictions contribute to the transformation of the planning team and result in expansive learning in the project planning environment?

It is my view that an understanding of and an appreciation for the processes at work coupled with an interventionist methodology would result in the facilitation of new practices and strategies in the planning team and make the task of introducing the shared services in

institutions a smooth and stress-free experience for all the stakeholders involved in the process.

**Q1** was used to explore the changes that occurred in the project office staff as a result of engagements with their past and current practices. **Q2** explored the origins of the contradictions and determined the contribution of past practices to the contradictions while **Q3** sought to provide an explanation of the transformation in work practices based on the results of a DWR intervention. To further establish the case for Activity Theory, a study of the literature will be used to explore theories of organisational learning and their strengths and weaknesses and their suitability as the unit of analysis when compared with Activity Theory.

The literary support for the Activity Theory approach has been drawn from the works of scholars in the sociocultural Activity Theory tradition such as Engestrom (1999a,1999b, 2001), Kuutti (2001), Daniels et al (2001, 2005, 2007a, 2007b) and Thompson (2004) and will also refer to other sociological theories of management for comparison. There will also be references to literature that discussed Higher Education collaboration and shared services in other cultural settings for example, the United Kingdom, United States of America, Finland and Germany among others.

## **1.9 Why is this study important?**

The study is important for two reasons. Firstly, it occurred in a culturally unique setting namely Barbados, a post-colonial developing country. The topic has not been studied or researched before in this context and presents the opportunity for new work. After forty years of independence, there are vestiges of the colonial past that emerge in the way the Barbadian civil service operates. For example, there is still a high level of bureaucracy in government's operation as well as a high level "territorial behaviour" which often leads to difficulty in engaging in collaborative exercises. This has impacted on the way government's business is done and is relevant to the experiences of the project team being studied.

Secondly, this study is important because it will add the Barbadian perspective on the shared services/collaboration to the rich body of work which exists across the continents. Models of collaboration range from informal collaboration initiatives to the creation of a unitary

structure or full merger (Harman and Harman, 2003) and Hart (2005). The continuum is represented in Figure 1.2. The case being investigated in this study falls between affiliation and consortium.

Informal collaboration	Affiliation	Consortium	Joint Department	Merger with federal structure	Merger with unitary structure
<b>COOPERATION</b>		<b>COORDINATION</b>		<b>MERGER</b>	

*Figure 1.2 Models of collaboration (Harman and Harman, 2003)*

The literature relating to the study of shared services and collaboration reveal that the issue has been a fixture in Higher Education in larger countries such as England, South Africa, New Zealand, the U.S.A and Australia. Searches of literature on the issues of Higher Education collaboration reveal that the matters that impact on shared services and institutional collaboration have engaged the attention of a number of researchers. Billet (2002), Duke and Jordan Ltd.<sup>10</sup> (2008a, 2008b) and Baker (2010) produced work on the subject in the United Kingdom while Ulrich (1995), Magolda (2001), Kezar (2005), and Dow (2008) explored the topic from the American perspective. Harman (2000) and Mildred (2002) have produced other research for the Australian context and Roebken (2008) has explored the collaborations using the South African experience. Martin (2001) also produced a body of work which examined shared services in Central European countries which included Germany, Austria and Switzerland. Martin's work explored the factors which were important to the successful implementation of shared services in the three countries listed previously.

The work by the above researchers puts an international face on the impact and effect of collaborations. The consensus in relation to collaboration and the introduction of shared services is that they are negotiated and implemented for a number of reasons. These include, the need to cut cost, improve efficiency and effectiveness, increase competitiveness, improve productiveness and enhance student learning (Ulrich, 1995; Kezar, 2005; Roebken, 2008). It has been stated in the literature that collaborative exercises and the introduction of shared services are difficult to plan and execute given the human and sociocultural issues that will be encountered. For the engagement to be successful there must be keen awareness of the

<sup>10</sup> The company carried out a study into shared services for the Joint Information Systems Committee JISC in the United Kingdom

potential for disturbance among the planners and strategies must be introduced to ensure that challenges to the initiative are mitigated.

Similarities and differences exist in the previously cited works given that they have examined the issues of collaboration from different perspectives and in different cultural settings. Harman (2002) noted that the varied perspective included human resources, management, finance, academic governance, administration and professional development. However, there was not enough discussion in the literature on the “human side” of collaboration or shared services given the importance of people in the workplace. Additionally, the literature did not address the impact of the move towards collaboration and shared services on work practices in the organisation or how work practices could affect the new collaborative arrangement. Billet (2002, p. 457) stressed the importance of the work place experience in cooperative efforts. He made the following observation:

Workplace experiences are not informal. They are a product of the historical-cultural practices and situational factors that constitute the particular work practice.

A very important feature of the interaction within collaborative ventures is the impact of culture. Locke (2007) discussed the importance of the cultural dynamism that is present in Higher Education alliances noting that culture is not always a stable entity but is constantly being remodelled and revised. The idea of the subculture is important and according to Sporn (1996) and Tierney (1988), one should not assume that the shared set of organisational beliefs and values are held and subscribed to by all members of the organisation. This is an acceptable proposition since people have different personalities and will react differently based on their life and organisational experiences.

It is therefore reasonable to assume that workers in the three organisations will interpret a set of beliefs differently and will bring multiple perspectives to the context. Tierney (2008) addressed the importance of culture in the organisational setting by citing Brennan and Shah (2000, p. 341) who stated, “*culture facilitates and blocks change*”. Implicit in the statement is notion that the achievement of change is dependent of how the dynamics of the cultural issues are tackled. If planners employ the correct strategies and correct work practices in the given cultural context then change will occur; if not failure will ensue.

An analysis of the situation indicated that the three institutions had evolved over the last forty to sixty years, creating unique histories, cultures, social, and educational practices. In addition, the organisations have developed a social equilibrium that is at the heart of their present existence and stability. The passage of time led to the creation of institutional identities and boundaries (Daniels et al, 2007a) that were clearly defined and closely guarded. The objective of the shared services venture was to develop a new *modus operandi* and create a working environment that would provide the opportunity for engagement that would result in the improvement of the institutions with respect to the provision of educational services. One must however be cognisant of the fact that there is the tendency of human beings to defend their “turf”, thus creating the possibility of a “clash of cultures” and the resulting resistance to change. Hence the project office staff would be required to devise strategies and structures that would allow them to navigate the difficult “cultural waters”.

A challenge that would result from the introduction of shared services project would be the management of the impending change, bearing in mind that a dialectical relationship exists between the desire for continuity and the acceptance of fundamental change. I have not used the term “clash of cultures” pejoratively, but rather to indicate the potential for the creation of disturbances brought about by the linking of three sets of entrenched cultural practices in a collaborative effort. No assumption(s) is/are made about the superiority or inferiority of one set of cultural or educational practices over the other. In fact, the uniqueness of the individual cultures and practices has led to the success of the organisations in their respective niches of the Barbadian educational landscape; such practices were useful in creating in the project team a need to draw on the strengths of the individual institutions in charting the new direction.

In the literature there was reference to the additional factors that would be critical to success of efforts at collaboration and shared services. If they were not managed correctly any effort at collaboration and sharing of resources will be unsuccessful. Three key factors in achieving success were identified. According to Martin (2011) they were stakeholder buy-in, consultation with key stakeholders, communication with all parties that were involve in the process and change management.

The potential for change brought about by the introduction of shared services provided the opportunity for the staff of the planning office to engage with possible problems by using



existing tools or creating new ones to solve those problems. Other outcomes would be the creation of new boundaries (professional, academic, departmental), and the creation of new sociocultural formations and practices. There was discussion on how to achieve organisational change and improvement in the research literature but it was pursued mainly from a sociological, management or organisation behaviour perspective. Hellreigal et al (1998), Jackson and Carter (2007) and Kreitner and Kinichi (2007) discussed organisational change but did not engage in any great detail from the sociocultural perspective.

This study provided the occasion to explore the dialogues that occurred and the multiple perspectives that resulted from the interaction of three social systems and the existing social worlds. Furthermore, this intervention created an environment in which professional learning and consequently organisational learning and change could occur. A recent body of work by several researchers who investigated professional learning in multiple interacting workplaces suggested conceptual tools that can be employed in the study of the interaction. A number of important case studies were provided by Daniels and Warmington (2007), and Daniels et al (2007a, 2007b).

The issue of boundary development and protection are critical and must be examined at this stage and I will now invoke the use of the animal cell as a metaphor to highlight the importance of the boundary. A cell membrane surrounds each cell and forms a boundary that protects the cell from outside interference by providing assistance in maintaining cell equilibrium and preventing leakage and loss of cell material. In the same way, while organisations develop, boundaries based on organisational identity and history, are created to protect the organisation from forces that may disrupt the status quo, the internal power relations and the organisational equilibrium. The boundaries do not only occur at the macro level of the organisation, but at the micro or departmental level. When the workers feel personally threatened by perceived problematic occurrences, the boundaries will also be set up at the personal level.

The HEDU planners needed therefore to develop strategies to overcome the cross-boundary impediments at the institutional, departmental and personal levels. When the boundaries were successfully crossed, the impediments gave way to new forms of agreed professional practice (Nixon et al, 1997; Findlay, 2008). Daniels et al (2007) worked on a research project which entailed working across school boundaries. They used the Change Lab approach to

explore transformation and expansive learning and adopted the approach that is outlined in Table 1.2. The approach was centred on the exploration of the practice of the participants in their work environments. The objective was to engage the participants in a DWR setting about their past and present practices with a view to creating new practices. The work was also geared towards assisting the participants to overcome the boundary-crossing challenges that existed in inter-organisation collaboration.

*Table 1.2 Approaches to studying professional learning across boundaries (Daniels et al 2007b)*

<b><i>Present practice</i></b>	identifying structural tensions (or ‘contradictions’) in current working practices
<b><i>Past practice</i></b>	encouraging professionals to consider the historical development of their working practices from their different perspectives/agencies
<b><i>Future practice</i></b>	working with professionals to suggest new forms of practice that might affect innovations in multi-agency working to support effective work with clients.

The results of research of Daniels et al (2007b) suggest that when the boundaries have been crossed and there is management of the interacting sociocultural environments, expansive learning occurs as well as cross border collaboration. The expansive learning is the result of the horizontal crossing of boundaries across institutions. The importance of boundary crossing was also highlighted in the work of Tuomi-Gröhn (2007), who researched transference as the “goal of collaboration across the boundaries of school and work”.

The shared services project therefore presented an opportunity to the planning committee to create an environment that provided for the engagement of the staff of the three colleges and the development of new forms of professional practice that would facilitate the smooth introduction of the shared service. This could be achieved through the development of a number of strategies that assisted the project planners in identifying and mitigating the potential disturbances that were likely to occur in the new collaborative structure. I note that the strategies employed should attend to the affective needs of the workers. The key issue therefore at this stage of the discussion is: How would I operationalise the process based on an activity theory framework and a Development Work Research methodology?

### **1.10 The Importance of a Methodological Strategy**

Vygotsky (1997, p. 399) underscored the critical importance of methodology to a study of any kind by stating that:

Anyone who attempts to skip this problem, to jump over methodology in order to build some special psychological science right away, will inevitably jump over his horse while trying to sit on it.

In his view, methodology is like a path that has to be charted through an uncharted territory to reach a desired destination. The methodology provided the lens through which we were able to view the world we sought to explore. Cohen et al (2000) support the well-held view that it is the methodological considerations, which give rise to the type of instrumentation and data collection. They cited the work of Hitchcock and Hughes (1995, p. 21) who proposed the view that the methodological position must be based on ontological assumptions which in turn lead to the epistemological assumptions that drive the methodological deliberations. The study was exploratory and developmental with participants drawn from the staff of the HEDU Project Office and the institutions that were involved in the shared services/merger. It must be noted that the study was conducted in a Barbadian context and engaged with a particular setting and the events associated with that setting. It was therefore a case study.

Best and Kahn (1998, p. 248) explained the case study in the following way:

The case study is a way of organising social data in order to view social reality. It examines a social unit as a whole. The unit may be a person, family, social group, a social institution or a community. ...The case study probes deeply and analyses interaction between factors that explain present status or that influence growth or change.

Stake (2000, p. 435) in discussing the case study makes a very strong point when he writes, “the case study is not a methodological choice but a choice of what is to be studied.”

The research project involved the study of people, roles, processes and the outcome of the varied interactions of the participants. It therefore employed a qualitative approach to probe the very complex interactions of the project teams in their quest to improve their work practices. Denzin and Lincoln (2000, p. 8) defined qualitative research in the following way:

The word qualitative implies an emphasis on the qualities of entities and on processes and meaning that are not experimentally measured.... Qualitative researchers stress the socially constructed nature of reality, the intimate relationship between researcher and what is studied and the situational constraints that shape the inquiry. They seek answers to questions that stress how social experience is created and given meaning.

Cohen et al (2000) also shared the above view, while Neuman (2006) suggested that self-assessment and self-reflection in a situated socio-historical context were an important part of the research process. In seeking to answer the questions raised in this enquiry, an approach that helped the participants work through the problematic issues brought on by their social realities was employed. More in-depth discussion on the importance of the case study will occur in Chapter 3.

### 1.11 Research Timetable

The management of the study was critical to its success. This research project was conducted in five phases that are described in Table 1.3.

*Table 1.3 Timeline for research project*

<b>Phases</b>	<b>Dates</b>	<b>Details</b>
<b>Phase I</b>	1 <sup>st</sup> September, 2007 (iterative)	Literature review, Document Analysis, Questionnaire design
<b>Phase II</b>	1 <sup>st</sup> May, 2008	Questionnaires, Interviews, Focus Groups
<b>Phase III</b>	1 <sup>st</sup> July, 2008 - 31 <sup>st</sup> August, 2008	Preliminary analysis of the pre-change lab data
<b>Phase IV</b>	1 January, 2009 – 30 <sup>th</sup> September	Change Labs and preliminary analysis
<b>Phase V</b>	1 <sup>st</sup> October, 2009, - 31 <sup>st</sup> July, 2010	Detailed analysis, reflection and writing of dissertation

### **Phase I**

This phase was exploratory with the aim of examining the literature in order to support the study. It examined the literature in order to determine the feasibility of using Activity Theory as the unit of exploration in the investigation of proposed merger/shared services. In addition, the issues surrounding Higher Education shared services in a number of countries were investigated to find commonalities and determine the extent to which sociocultural and human issues played a role in the success or failure of the projects. This phase of the study was designed to develop a sound framework that supports the dissertation.

### **Phase II**

The researcher sought permission from the leaders of Erdiston College, SJPP and BCC to conduct a data collection exercise in the form of a questionnaire. In addition to the questionnaire, interviews were conducted with the principals of the three institutions to examine the issues from their perspective. A focus group was convened with staff of the HEDU planning office to explore their experiences in relation to the trajectory of the project with its many twists and turns. The data that was received from the data collection exercises were critical to the provision of mirror data in the DWR sessions.

### **Phase III**

Phase III involved a preliminary descriptive analysis of the questionnaires to determine which issues the respondents thought were critical to the success of the collaboration. The interviews and focus groups were analysed to determine the areas of potential contradictions and conflicts. These findings were useful in providing stimulus data for the Development Work Research phase of the project (Phase IV).

### **Phase IV**

Phase IV of the change labs was a journey into interventionist and development research work (DWR) with the HEDU planning office staff as the subject. The staff were exposed to the issues generated by the research data and were introduced to the change labs as a means

of providing the opportunity to work through their contradictions and develop new tools and strategies and new work practices that would contribute to an environment that permitted the introduction of shared services and paved the way for the merger to be completed at a later date.

## **Phase V**

The final phase of the project consisted of a comprehensive analysis of the research findings with a determination of the outcome. At this stage, further reflection was done with a view to determining the strengths and weaknesses of the particular research and suggesting further issues relating to the sociocultural issues that could be the subject of research work in the future.

### **1.12 Organisation of this study**

**Chapter 1** introduces the study, discusses the background and context in which the study occurs and provides a timeline for the completion of the research. **Chapter 2** will review the literature in order to set the framework for the study. It will explore the different attempts at developing theoretical frameworks for studying organisational learning; it will also trace the historical evolution of Activity Theory up to modern times while discussing the critical issues that have been raised in the literature to make a case for Activity Theory as the unit of analysis. A case will also be made for the ways Activity Theory has been used in the analysis of group work and institutional change with the objective of providing a justification for the project work of the team as an activity system.

**Chapter 3** will examine the ontological and epistemological position underpinning the study. It also discusses the methodological implication of Activity Theory and explores its impact on the research in addition to discussing the research strategy. **Chapter 4** will provide the analysis of the data and the presentation of results. **Chapter 5** will reflect on the strengths and weaknesses of the research process, discuss the conclusions, make recommendations and explore the implications for future research in the area of organisational change in Barbadian context in relation to Activity Theory and Development Work Research.

## **CHAPTER 2 LITERATURE REVIEW**

### **PART A**

#### **2.1 Introduction**

The context and background to this study, the definition of the problem and the questions that will be used to study the research problem were discussed in Chapter 1. The chapter also conveyed a historical and professional analysis of the project team that was central the study. Chapter 2 is divided into two parts, and is concerned with reviewing scholarly literature, which discusses the approaches to studying organisational change in context. Part I of the chapter explores Systems Thinking, Communities of Practice and Culture as possible approaches to studying organisations. The works of Senge, Lave and Wenger among others are examined. Part II discusses Activity Theory and Development Work Research based on the work of Engestrom. The purpose of the chapter is to examine organisational learning from the aforementioned perspectives and build a case from the literature for the use of Activity Theory as the pivotal theoretical framework for this study.

Preliminary observations of the landscape in question indicate that the primary challenge to the project team was the need to understand change from an organisational perspective, as well as being cognisant of those factors that were affecting them positively or negatively as they worked on achieving the project goals with which they were engaged. Additionally, the team needed an introduction to a context that would permit them to evaluate their work practices and judge their effectiveness in the project office “workspace”. The ultimate result would be personal, professional or organisational learning.

During the literature review, the intent was to ascertain the most suitable methodology for studying a research problem which dealt with organisational change and learning in context. In the following sections I will discuss theories of organisational learning and change, which scholars in the field have proposed. Furthermore, I intend to extract the central ideas from these theories and explore their suitability for use in the context of this enquiry. I shall compare and contrast these theories with Activity Theory in order to show that this particular theory is the strongest unit of analysis and that Development Work Research is a very suitable methodological approach that can be adopted for exploring the individual and systemic learning that are likely to occur in the given research situation.

## **2.2 The Organisation and Organisational Learning Defined**

Mullins (2002, p. 96) discussed the concept of organisation in the following terms:

Organisations have some function to perform. Organisations exist in order to achieve objectives and to provide satisfaction for their members. Organisations enable objectives to be achieved that could not be achieved by the efforts of individuals on their own. Through cooperative action, members of an organisation can provide synergistic effect. Organisations are an integral part of society involving both private and public sector.

From the above definition it is evident that people are an integral part of the organisation and Mullins (2002) drew support for the importance of people to the organisation by citing the definition of Farnham and Horton (1996) which reinforced the notion that human and other inanimate resource combine synergistically to achieve the goals of the organisation. When organisations are formed, they develop, taking on an identity and character of their own based on their historical experience. To develop the organisational identity, people and processes are engaged to shape and mould the organisations into entities that possess the distinctive organisational character and ethos.

The preceding definition also highlights the dynamic nature of the organisation and the importance of people to the organisation. Robbins (1996, p. 5) gave a similar definition when he defined the term organisation as “a conspicuously coordinated social unit that functions on a relatively continuous basis to achieve a common set of goals”. He was careful to point out that there is a range of groupings that can fall under the sobriquet of organisation such as industrial firms, the military, police, schools, government agencies and so on.

An organisation can be resolved into five interacting components, namely: goals, people, roles, processes and outcomes. The synthesis and coordination of these components produce outcomes that are vital to the achievement of organisational goals. They are developed within a social and cultural context that must be considered in any discussion of organisational change. To understand organisational change, one must use a theoretical lens to view the internal processes that occur at both the organisational and personal level. The translation of the internal processes, the experiences which influence those processes, and the



external expression of those processes as reflected in the work practices of individuals in the organisation, must be the focus of any research that engages with organisational change.

Blackler (2009) presented the view that organisational studies have emerged as a very important area of research. Blackler noted that the shifts in organisational studies over the last few decades have led to the emergence of a specialist field due to the “explosion of interest in management”. He further explained that organisational studies have moved beyond the study of the nature of work and organisational effectiveness to other complex issues; he pointed out that these studies tackle areas such as the changing nature of organisations, labour, and the division of labour among others. Blackler (2009, p. 20) also highlighted the impact of research traditions on organisational studies. He wrote:

Organisation studies have attracted researchers from many traditions – positivism, social constructionism, critical realism, action research and ethnomethodology among them and also researchers who have very different interest and agendas.

Blackler also drew attention to the implication of the above quotation, noting that the convergence of the multiple traditions results in a situation where organisation studies is not a unified discipline but is characterised by “profound disagreements about what the appropriate foci of the subject should be, and how they should be researched and theorised”.

Dodgson (1993) expressed a similar view by noting that while several approaches to studying organisational change are discussed in the literature, there is the need for the transfer of some of the analytical concepts across approaches in order to improve the general understanding of organisational learning. Huber (1991) argued that scholars have produced a body of work which explored the various facets of an organisation’s life but that the prevailing literature lacked any synthesis of the various works. He asserted that research on organisational learning does not adequately deal with increasing the effectiveness of organisational learning. The outcome therefore has been the production of several competing theories and views on organisational learning and change.

Argyris (1999, pp. 67-68) noted that behavioural change has been the criterion used by “organisational developmental researchers and practitioners” to assess organisational effectiveness. He suggested that organisational learning was possible under two conditions. In the first instance such learning occurred when an organisation achieved its goal. This

occurrence meant that there was congruence between its plans and the outcomes that were reached.

In the second instance, learning was deemed to have occurred when a mismatch between what is intended and the actual outcome was identified and corrected. As Argyris (1999, p. 68) noted “the mismatch is turned into a match”. Implicit in this statement was the idea that there was reflection on why the mismatch occurred and the introduction of a solution to resolve the problem and reach the desired outcome.

The learning organisation as proffered by Senge (1990) was characterised by an environment where people were ‘learning how to learn together’. A key point made by Argyris (1999) in his discussion on organisation learning was that people who work in the organisation were the primary contributors to learning within the organisation. According to Argyris (1999, p. 68),

Organisations do not perform the actions that produce learning. It is individuals acting as agents of the organisation who produce the behaviour that leads to learning. A key idea was the assumption that there existed a corporate knowledge base which was the quintessence of the organisation. This knowledge was shared, interpreted and used throughout that organisation at the collective level. However, it should be noted that collective knowledge in some instances was an amalgam of individual knowledge.

Schön (1973) cited in Smith (2001) contributed to the discussion by indicating that one must view learning in a social context. Such systems he argued must within themselves be capable of self-transformation with a minimum of disruption. In addition, he pointed out that social systems learn when they acquired a new capacity for behaviour. This capacity was based on taking action and reflecting on the efficacy of such action. Argyris and Schön (1974, p. 4) stated:

All human beings - not only professional practitioners – need to become competent in taking action and simultaneously reflecting on this action.

The objective of the organisation was therefore seen as the creation of an environment which permitted members to work collaboratively, across personal and professional boundaries, reflect on current work practices and solve problems with ground breaking solutions.

### 2.3 How Culture Impacts on Organisational Change

Sathe (1984), Davis (1984) and Schein (1997) offered an alternate way of exploring organisational change using a cultural argument. They discussed the role of culture as a determining factor in organisational leadership and learning. Schein (1997, p. 12) defined culture as:

...a pattern of shared basic assumptions that the group learned as it solves its problems of external adaption and internal integration that has worked well enough to be considered valid and, therefore to be taught to new members as the correct way to perceive, think and feel in relation to those problems.

Schein concentrated on the analysis of culture by taking into account a view which highlighted the importance of artifacts that formed part of the organisational environment. In addition, the managers' roles, interactions, and assumptions were considered as vital to the interactions that occur in the organisation. There was agreement in Martin (1992, 2002) and Brown (1998) on the importance of cultural components to the well-being of the organisation. Brown (ibid) viewed culture as a metaphor for understanding the organisation where every aspect of the organisation combined to form the culture. Brown (ibid) and Martin (ibid) also discussed the importance of roles, artifacts, basic assumptions, norms and behaviours in a cultural environment noting that there was an intricate relationship among these elements.

An important aspect of any culture whether at the national, organisational or individual level, is its expression. Bruner (1996) contended that an innate characteristic of cultural expression was "meaning making"; he viewed it as a precursor to cultural expression. Bruner (ibid, p. 3) explained meaning making in the following way:

Meaning making involves situating encounters with the world in their appropriate cultural contexts in order to know "what they are about". Although meanings are "in the mind", they have their origins and significance in the culture in which they are created. It is this cultural situatedness of meanings that assumes their negotiability and, ultimately their communicability.

Bruner further expressed the view that culture "makes possible the working of the minds". He contended that the working of the mind situates learning and thinking in a cultural context and that there was a dependency on the cultural resources that were available for use.

The idea of learning within a group is important to this study since the context of the study is built around the sociocultural issues that influenced planning for the introduction of shared services in three organisations. Pentland (1995) recognised the social nature of knowledge in the organisation and the cultural norms, power relations and practices that influenced it. The approach was based on the work of Holzner and Marx (1979) cited in the work of Pentland (1995) and had its roots in the sociology of knowledge; its main tenet was that organisational learning occurred through a set of processes in which knowledge was constructed, organized, stored, distributed and applied in practice.

The processes of constructing, organising, storing, distributing and applying knowledge occur in the collective setting of the organisation and are the result of the social relations that exist among the members of the organisation (Pentland, *ibid*). He proposed an interesting idea that showed the relationship between the notion of knowledge and practice where knowledge was created out of a set of on-going practices, which were embedded within the fabric of the organisation both at the social and physical layers of the organisation.

## **2.4 Two Approaches to Studying Organisational Learning and Change**

In the previous section two concepts, namely organisation and organisational learning were defined and discussed. A number of conceptual views have been proposed for studying organisational learning. They include the systems thinking approach, communities of practice, and cultural approach to studying organisational change. The subsequent section discusses the previously mentioned approaches and evaluates their suitability as the underlying framework for this study.

### **2.4.1 Systems Thinking**

As an alternative approach, the systems thinking paradigm emerged as a response to the principle of reductionism and its earliest root has been traced to pre-twentieth century philosophers. Reductionism is defined as the theory of breaking a problem or phenomenon into its simpler constituent parts and studying those parts from a ‘cause and effect’ perspective. The objective is to produce knowledge and understanding of the phenomenon as the sum of its parts (Flood, 2010).

Systems thinking was defined by Cabrera et al (2008, p. 301) as:

...a complex whole of related parts” - whether it is biological, (e.g. an ecosystem) structural (e.g. a railway system) organised ideas (e.g. the democratic system) or any assemblage of components comprising a whole.

In the organisational context, systems thinking is geared towards problem resolution with the aim of improving the organisation and its practices. Unlike traditional systems analysis which is contextual and which decomposes the elements of a system, systems thinking views the element in the context of its whole system. Capra (1996, p. 30) described systems thinking in the following way:

Systems thinking is “contextual”, which is the opposite of analytical thinking. Analysis means taking something apart to understand it; systems thinking means putting it into the context of a larger whole.

The argument of the systems thinking framework is that when an element that is problematic is isolated from the whole, a clearer understanding of why the problem occurs in relation to the whole system will emerge. Thus, a better understanding of the system can be gained by exploring the relationships and linkages between the components that are part of the system. Senge (1990) advocated the use of systems thinking as a means of engaging with organisational issues. He opined that there were obstacles to organisational learning that were embedded in organisational culture. These obstacles were an impediment to organisational development and change; the lack of dialogue was a major factor impeding organisational learning. Senge (1990, p. 3) explored the organisations from the perspective of the learning organisation, which he defined as an organisation:

where people continually expand their capacity to create the results they truly desire  
where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning to see the whole together.

Senge’s work was based on the idea that learning is a human activity in which there is the recreation of one’s self. The idea of recreation is also applicable in the organisational context whereby organisations are constantly adapting to changes that result from the effects of economic, political, environmental and cultural factors. Senge (1990, p. 14) noted that learning in the organisation must be what he describes as “adaptive” and “generative”. He argued that the combination of the two types of learning enhanced the capacity of members

of the organisation to be creative. Senge proposed four disciplines or component technologies to support systems thinking as a means of exploring the idea of the learning organisation. The disciplines were *personal mastery*, *mental models*, *building shared models* and *team learning*. A discipline was defined by Senge (1990, p. 10) in the following way.

By “discipline” I do not mean an “enforced order” or “means of punishment, but a body of theory and technique that must be studied and mastered to be put into practice.

Senge observed that there was a high level of coupling and dependency among the disciplines. In positing his view on the personal mastery, there was the argument that organisations will “learn” if the individuals that comprise it also learn. He was however quick to point out that this is not a given but is necessary in the process of organisational learning. Personal mastery moved beyond the notion of competence and skill sets, to the point where persons lived in a “continual learning mode”.

In writing on the issue, of mental model, Senge (1990, p. 8) referred to the model as deeply ingrained assumptions, generalizations, or even pictures or images that influence how we understand the world and how we take action.

He attached an importance to the mental process and explained that the mental model commences by looking inward to discover the “internal pictures” an individual has of the world. The picture is then brought to the surface and held up to examination by others. This type of modelling resulted in the individual exposing his or her thinking to influence by others, thus opening the way for an intervention by a third party to assist in clarifying uncertainties.

The third discipline which is ‘building a shared vision’ spoke to the ability of leadership to develop a focus on what goals are to be met in the future. Senge used the terminology “pictures of the future”. Having a shared vision according to Senge (1990, p. 9) was the “capacity to hold a shared picture of the future we seek to create”. He further noted the following:

The practice of shared vision involves the skills of unearthing ‘shared pictures’ of the future that foster genuine commitment and enrolment rather than compliance.

The significance of the foregoing statement is that leaders of organisations should not impose their singular vision on the members of the organisation but create the environment where the practices that are developed lead to the development of the shared vision.

The fourth discipline, ‘team learning’, according to Senge, described the ability of the team members to jointly achieve desired goals as a group. Such learning began with dialogue where the members of a team “suspended assumptions and entered into a genuine ‘thinking together’ ” (Senge 1990, p. 10). This was achieved through interventional dialogue sessions in which team members assembled to “practice dialogue and develop the skills it demands” (Senge 1990, p. 259). The session was governed by the following ground rules:

1. Allowing all members of the "team" (those who need one another) to act together.
2. Explaining the ground rules of dialogue.
3. Enforcing those ground rules so that if anyone finds himself unable to "suspend" his assumptions, the team acknowledges that it is now "discussing" not "dialoguing".
4. Making possible, indeed encouraging, team members to raise the most difficult, subtle and conflictual issues essential to the team's work.

The dialogue was a form of intervention in which discourse was used to discover the challenges of the team as they operated in a given environment. In explaining the use of dialogue Senge noted that there was a clear distinction between dialogue and discussion with dialogue being at the core of allowing team members “the free and creative exploration of complex and subtle issues, a deep ‘listening’ to one another and suspending of one’s own views” (Senge 1990, p. 237).

Senge introduced systems thinking as the fifth discipline. He viewed it as the conceptual glue that holds together the other disciplines and presents a theory that finds expression in organisational learning and the attendant change in practice within the organisation. Senge (1990, p. 12) puts his view on the role of systems thinking in the following way:

That is why systems thinking is the fifth discipline. It is the discipline that integrates the disciplines, fusing them into a coherent body of theory and practice.

In exploring the use of systems thinking as an approach for studying a small team of workers, a number of limitations have become evident. Systems thinking lacks the theoretical base that can be used to explore human activity and consciousness, as well as development of meaning in an organisational context. Engestrom and Kerosuo (2007, p. 340) were of the

view that when an organisation is examined according to the systems view there is a weakness, given that the systems view does not adequately address sociocultural and human issues that are part of the day to day activities of the organisation. The authors made the conjecture that:

The system view of an organisation is blatantly insufficient when researchers try to understand and facilitate qualitative changes by means of expansive learning.

Changes must be initiated and nurtured by real, identifiable people, individual persons and groups (ibid).

The idea being conveyed was that organisations were more than systems and required a human element to function and survive as the organisation evolved. Furthermore, the systems view did not theorise on the idea of activity within the system, and therefore excluded the view of how people deal with the various entities that are found in the systems environment. Additionally, it did not present a theory that modelled how change occurs and it ignored the idea of structural tensions that result in change.

Additionally, there was also a lack of emphasis on learning at the individual or systems level; the aforementioned approach did not adequately deal with, or theorise the learning which formed an integral part of any organisational structure as it evolved, and changes were experienced at systems and collective levels. The next section explores the suitability of communities of practice as an approach to studying organisational learning and change.

#### **2.4.2 Communities of Practice**

The community of practice perspective was introduced by Lave and Wenger around 1991. It emerged out of a situated learning study which dealt with a set of apprentices attached to various organisations. Wenger et al (2002, p. 4) defined communities of practice in the following way:

Communities of practice are groups of people who share a concern, a set of problems or a passion about a topic and who deepen their knowledge and expertise in this area by interacting on an on-going basis.

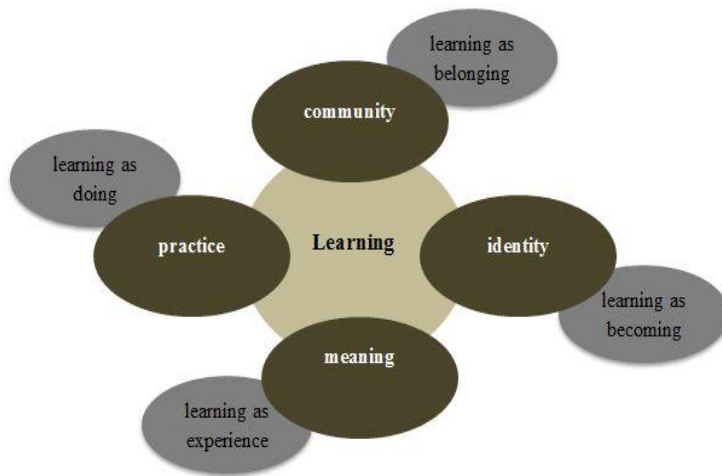
They further explained that the pervasiveness of communities of practice by stating that:

Communities of practice are everywhere. We belong to a number of them – at work, at school, at home, in our hobbies...



As noted in the definition, the benefits to the members of the communities of practice are knowledge acquisition and learning, but this definition does not assume that the community exists because of the desire to learn; often learning is an attendant result (Wenger et al, 2002).

“Communities of practice” is underpinned by the social theory of learning as depicted in Figure 2.1 (Wenger, 1998). The topic has also been addressed with respect to its impact on and benefit to the organisation as seen in the works of Brown and Duguid (1991) drawing on the work of Orr (1996), and Blackler (1995).



*Figure 2.1 Components of social theory of learning (Wenger 1998)*

From his perspective Wenger (1998, p. 5) proposed four concepts as central to the existence and operations of communities of practice. The concepts are explained in table 2.1.

*Table 2.1 Components of Communities of Practice (Wenger (1998, p. 5)*

<b>Meaning</b>	a way of talking about our (changing) ability – individually and collectively – to experience our life in the world as meaningful
<b>Practice</b>	a way of talking about the shared historical and social resources, frameworks and perspectives that can sustain mutual engagement in action
<b>Community</b>	a way of talking about the social configuration in which our enterprises are defined as worth pursuing and our participation is recognisable as competence
<b>Identity</b>	a way of talking about how learning changes who we are and creates personal histories of ‘becoming’ in the context of our communities

In the organisation, persons develop ways and means that permit them to carry out their job functions. Practice therefore is about engagement; it is about ‘doing’ and acting in context and developing meaning. It involves interaction with other persons, symbols, tools,

languages and the rules that govern this interaction in the work environment. The notion of practice based on Wenger (1998) includes what is spoken and what is not; it includes the use of cues, and shared views. He further indicated that practice is “a process by which we can experience the world and our engagement with it as meaningful” (Wenger 1998, p. 51). For Wenger, meaning is negotiated through participation and reification. Reification has been defined as “making into a thing” or in essence the production of objects as means of giving form to experience (Wenger, 1998, p. 58). These objects are useful in the development and creation of knowledge in the organisation.

A question that can be raised at this stage of the discussion is what is the relationship between practice and learning? Within the community of practice according to Wenger, learning is the “engine of practice and practice is the history of learning”. In the discourse on communities of practice, learning is described as occurring at the individual, community and organisational level. According to Wenger (1998), at the individual level learners must engage in contributing to the practices of their communities. He also noted that at the level of the community, learning is a matter of refining practice and adding new members to the community. From the organisational perspective, learning is concerned with sustaining the organisation and increasing the knowledge base through the collective effort of the members.

Brown and Duguid (1991), Wenger (1998; 2002) argued that the strength of the community of practice can be leveraged to solve problems and enhance the organisation and its profile based on a set of common goals. In the discussion of the achievement of goals, the notion of participation received strong treatment from Wenger. Participation is an active and dynamic process where the members of the community of practice engage with and learn from the activities and experiences of the community. By participating, the members shape the community of practice and are shaped by their ‘community of practice experience’. As a result there are changes to the individual practice which provide personal as well as organisational benefits.

There are different levels of individual participation in the community of practice based on the members’ function and role in the organisation, whether managerial or operational. The different levels of autonomy which accompany the roles are often a source of tension given the power relations that are present. Tensions can also occur when an individual is a member of multiple communities which make conflicting demands (Cox, 2005). It must be noted that

further tensions are possible with respect to the crossing of boundaries by individuals who belong to multiple communities of practice. This is a structural problem in organisations where multiple communities of practice exist. The issue for managers therefore would be to develop strategies that regulate the work of the groups in order to reduce sources of tension.

Despite the support accorded communities of practice, a number of limitations exist within the paradigm. Kerno (2008), while espousing the potential value and contribution community of practice can bring to the organisation, drew attention to the existing challenges and limitations of communities of practice. He noted that these challenges are not often immediately observable but occur at the “structural, ecological and cultural level of the organisational analysis”. He noted the following as limitations:

1. The availability of a timeframe that permits engagement with those activities, which are necessary for the effective operation of the community of practice. This is also a function of the existing complexities of modern organisations.
2. There are organisational tensions, which may result from the structure of the communities of practice. Kerno (ibid) observes that the communities of practice lack formal power in the organisational context and that there is a resultant tension in which the organisation and its needs take precedence over the community of practice even though it is situated in the organisational context.
3. Citing the work of Roberts (2006), Kerno (ibid) raised the issue of the cultural challenges, noting that a community of practice because of its social composition is likely to mirror the:  
wider social structures, institutions (or lack of them), and sociocultural characteristics present in the broader environmental context in which it is situated.

The previous point highlights the transference of the problems of the wider organisation into the community of practice given that the community is comprised of individuals who have developed practices based on the organisational structures or lack of them.

Boud and Middleton (2003), though supportive of the value of communities of practice as instruments that give rise to learning within organisations, questioned the use of communities of practice as a framework for discussion of the informal learning that takes place in the organisational setting. In a study of communities of practice in four distinct groups within an

organisation, Boud and Middleton (ibid) identified several issues that influence the learning in communities of practice. Firstly, they suggested that the learning and interaction was based on the coupling of groups and that the results depended on whether the groups were coupled loosely or tightly. In addition, the authors inferred that the geographical location of the group members contributed to the type of learning. Secondly, there were differences between virtual groups and the groups that interacted face to face. The tools and the modes of operation were quite different and the study of learning within these distinct groups may need separate treatment. Boud and Middleton, in exploring the learning being encountered, concluded that the community of practice as the framework for exploring the type of learning being generated in the community lacks the theoretical base that supports the exploration of the complex social interactions that are present in a community of practice environment.

Another limitation of community of practice theory is the weakness of its treatment of how changes and innovation occur in the “practice”. According to Fox (2000, p. 860) cited in Roberts (2006)

community of practice theory tells nothing about how, in practice, members of a community change their practice and innovate.

This section introduced the concept of community of practice and its generally accepted characteristics. It explored the underpinning framework and the role of communities of practice in the development of new practices and the resulting contribution to organisational learning. Communities of practice can bring value to the organisations by providing a framework for knowledge generation and organisational learning. The weakness of this paradigm however is its theoretical treatment of the how the learning within the organisation occurs. There is need for future research in this area. Additionally there is need for research on the cultural and structural impact of multiple communities of practice operating within an organisation.

## **2.5 Conclusion to Part A**

Sections 2.4.1 and 2.4.2 examined two approaches that can be employed in the study of organisational learning and change. It was shown that both approaches have merit in as much as they can be used to focus on narrow areas of the study of organisational learning. It was

noted that given the complexity of the environment, the theoretical base of any approach chosen to study organisational learning must engage with the idea of how learning occurs. The next section discusses Activity Theory as an approach that could be adopted to study organisational learning as it occurs within a project team from the Higher Educational Development Unit.

## **PART B**

### **2.6 Applying Activity Theory to the Study of Learning in the Organisation**

In addressing the shortcomings of the communities of practice approach, Boud and Middleton (2003) suggested Activity Theory as an alternative and recommended it as another approach for studying the patterns of learning they had observed within the community of practice. They further indicated that what they observed could best be explored using the concept of expansive learning based on Engestrom (2001) noting that the boundary crossing resulting from working across boundaries within the communities could be captured and explained from an Activity Theory perspective.

In their search for a unit of analysis suitable to the study of organisational change and learning, Virkkunen and Kuutti (2000) concluded that the theoretical approaches to the study of organisational change previously discussed did not provide the width or latitude to explore organisation change and learning because of the narrow approach to the issues. These theoretical approaches failed to embed in their account an analysis of the role of multiple interacting objects and the complex interplay of relationships that existed in the social landscape of the organisation.

Virkkunen and Kuutti (ibid) suggested an alternative approach; they posited the view that Activity Theory provides a better platform for studying organisational change in the organisational framework and promoted it as an alternative to the aforementioned theories. This is possible due to Activity Theory's comprehensive approach that covers most of the facets of the interaction that occur in the organisational setting. It incorporates objects, processes, rules, roles and the idea of community in order to create a framework as well as the conceptual tools (Hiruma and Yamazumi, 2007) for analysing the social activities that affect the implementation of shared services. In addition, it encapsulates the previously mentioned processes in a historical context as well as providing scope for a multivoiced approach that permits a very accurate perspective of the sociocultural landscape being

studied. Activity Theory is dynamic and its on-going development and re-development has led to the birth of the Change Lab that has a strong sociological and psychological underpinning.

In addition, the case for Activity Theory as the unit of analysis was given currency by Engestrom and Miettinen (1999). They stated that complex situations and interactions must be approached from two perspectives. First, there was the theoretical perspective in which the theorist examined the issue from a distance. Second, the interactions must be approached from the perspective of the participants. The implication of this approach was that both the participants and the theorist/facilitator could develop and use multiple tools that permitted an intense engagement with the given situation and its interactions. The outcomes have their root in the disequilibrium which surfaces when an Activity Theory analysis is applied to practices in a work setting.

Furthermore, Activity Theory by virtue of its structure permits a synergistic relation with other methods. It can be used in conjunction with some of the previously discussed theories to critically analyse and engage with the given sociocultural situation. This strength permits the triangulation of initial mirror data collection and permits multiple complementing perspectives.

Engestrom (2007) also made a strong case for the adoption of Activity Theory to study change and learning in the organisation. He was careful to make the distinction between the ideas of organisational learning and workplace learning given their different disciplinary origins but noted that Activity theory bridged the divide in approaches of the two disciplines in a number of ways. According to Engestrom (2007, p. 336)

Activity theory embraces the idea of organisational learning to expand the unit of analysis of learning beyond the skin of the individuals, to examine collectives and organisations as learners (Engestrom, 1995). At the same time Activity Theory is strongly committed to pedagogical and interventionist actions to facilitate learning and change, a feature more characteristic to workplace learning than organisational learning.

The approaches to the study of organisational change which was discussed in the preceding section are valid in their own right when applied in the contexts for which they were developed. However, as noted in foregoing paragraphs, the body of work lacks the elements

which have been the hallmark of Activity Theory - a theory that supports the study of dynamic and complex sociocultural environments through a strong and sustained emphasis on the notions of objects, history, tensions and contradictions that are embedded in a sociocultural landscape.

The foregoing discussion examined the case for using Activity Theory as an alternative approach to the study of workplace learning. The next section and its subsections look at the historical development of activity theory and reinforce the case for its engagement with the study of teams in the workplace.

## **2.7 The Historical Evolution of Activity Theory**

Cultural Historical Activity theory (CHAT) is encapsulated in a rich tradition evolving over time, as researchers and scholars introduced new views, interpretations and perspectives. Engestrom (1999, p. 2) made the following observation with regard to this powerful theory:

To this day, its rich texture remains a well-kept secret to the Western scientific community.

The various interpretations and theoretical positions of activity theorists have been categorised into a number of distinct phases or generations. The following subsections will examine the various landmarks in the history of CHAT, namely, first, second and third generation activity theory. Emphasis will be placed on using CHAT as the theoretical platform that supports an interventionist approach to studying organisational Change.

### **2.7.1 First Generation Activity Theory**

CHAT has its origins in the cultural historical movement that occurred in Russia in the 1920s. Its early theoretical work can be traced to the early work of psychologist Lev Vygotsky. Some scholars also include the works of Marx and Engels as influences on the primary work of Activity Theory. The initial focus was on the relationship between individual human action and the mediation with artifacts while working towards particular objects and motives to reach a particular outcome (Engestrom, 1999a). Vygotsky's conceptualisation of mediation is depicted by Engestrom (2001) in Figure 2.2.

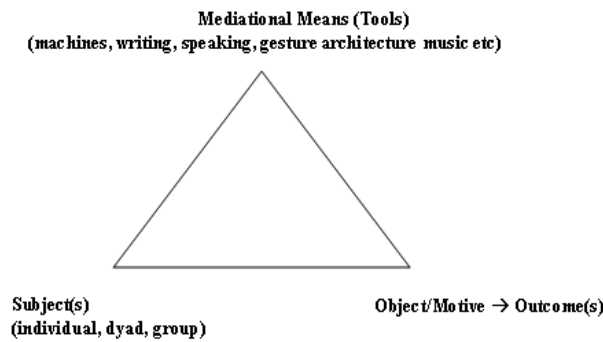


Figure 2.2 An activity system (Engestrom, 2001)

This triangle represents the Vygotskian approach to the interaction between human and artifacts in the mediational process. This Vygotskian view of activity was limited because its focus at the time was on the individual, while overlooking the idea that members of society often operate as part of groups and communities; their response is based on their roles and responsibilities, as well as the influence of the multiple viewpoints that originate within the group. This type of social interaction required a different explanation. Alexei Leont'ev further advanced Vygotsky's work by exploring the distinction between an individual action and collective activity; he proposed a new way of viewing activity. He postulated the theory that activity consisted of three levels (see figure 2.3) with the highest level being a collective which is activity driven by an object-associated motivation; the middle level consisted of an individual or group action motivated by a goal while the bottom level consisted of automated operations driven by tools.

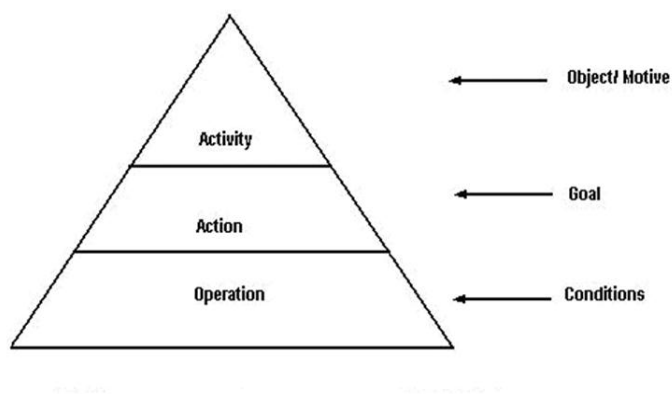


Figure 2.3 The hierarchical structure of Activity (Daniels 2003)



### 2.7.2 Second Generation Activity Theory

The “discovery” of Activity Theory by Western scholars has led to the development of a community of practitioners who have moved it from its purely psychological base into several fields including cultural psychology, management, health care, human computer interaction and organisational studies. The resulting lenses have spawned several interesting views and theoretical approaches to the study of Activity Theory. Engestrom’s expansion of Vygotsky’s and Leont’ev’s approach is considered as the second-generation Activity Theory.

Second-generation Activity Theory as posited by Engestrom (1999a, 2001) makes the case for artifacts as a critical component in the study of human activity and consciousness. He further argued that human activity and consciousness were a central and indivisible part of human existence and operation. Engestrom’s conceptualisation of second-generation activity led to the expansion of the original triadic representation to include the collective as opposed to the individuals operating under the mediation by tools. He further proposed that the study of mediation by tools should encompass all the other components in the system as shown in Figure 2.4. This idea supports the concept of the multiple viewpoints that are embedded within the system.

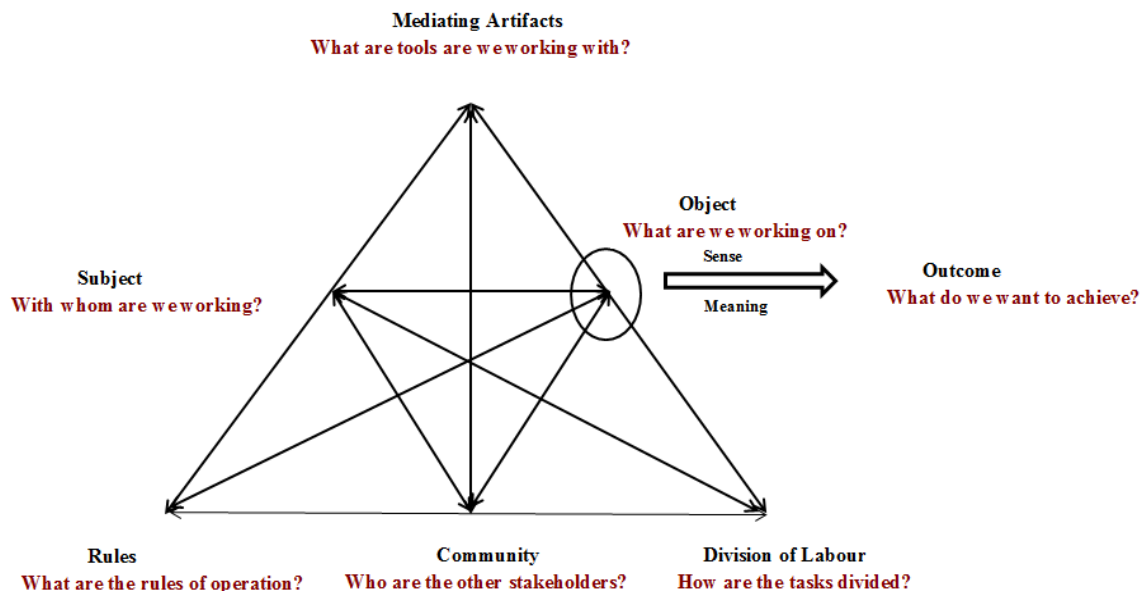


Figure 2.4 A second-generation activity system adapted from (Engestrom, 2001)

Activity Theory is predicated on five key principles, which make it suitable for sociocultural studies, (Engestrom, 2001). These are object oriented analysis, multivoicedness, historicity,

contradictions as sources of change and development, and expansive cycles transformations in activity systems.

Object-oriented analysis is not to be confused with that which is applied to computer programming but instead refers to the features which are bound up in a sociocultural environment and applied to the study of activity systems. Object-oriented analysis is an important facet of Activity Theory. The object of an activity system refers to the ‘raw material’ or problem space at which an activity is focussed and which is shaped and transformed into outcomes, using tools and signs. As noted in an earlier section, these tools are not necessarily physical but encompass symbols and mental instruments as well. For example, the object of a gardener is the garden; this is transformed over and over by the gardener’s use of physical tools as well as mental tools used in conceptualisation of the garden’s design. In a work related context, the major thrust from an object-oriented analysis perspective is clearly identifying the objects that the professional are working with and assessing their perceptions of the outcomes they wish to achieve. Analysis in recent research focusses on the object of the activity system in collaborative and distributive work environments.

The object functions as a unifying instrument in the very complex multivoiced setting where it becomes useful in providing a conceptual frame for the diverse actors namely the professional, groups, individuals who are active participants in an activity system.

Engestrom (2001, p. 134) drew attention to the idea that

...object-oriented actions are always, explicitly characterised by ambiguity, surprise interpretation, sense making and potential for change.

Multivoicedness has its basis in the fact that activity systems are sociocultural communities and consequently will be an amalgam of ideas, from several interacting sources (Engestrom 2001, p. 136). He discussed the issue as follows:

The division of labour in an activity creates different positions for the participants, the participants carry their own diverse histories, and the activity system itself carries multiple layers and strands of history engraved in its artifacts, rules and conventions.

It must be noted that the idea of multivoicedness can be viewed as a double-edged sword with the potential to foster consensus based development or to provide a measure of conflict that

must be resolved in order to bring about a measure of development. Multivoicedness is also a product of the many personal engagements with the given activity and the different perspectives that will be based on personal-historical experiences.

Historicity is based on the idea that activity systems are in a state of evolution. Those who study the present state of the system must engage with the historical account that would have developed across the subject, objects, and rules over time. As discussed in the introduction to this study, the introduction of shared services will impact on three institutions that have been in existence for a total of one hundred and forty years. The implication therefore is that the present status is a result of accumulated historical experience and development at all levels of the institutions and must be considered by the project team. It must be noted that in the interaction between institutions and the project team, the team's history will be a factor to be considered in the Development Work Research.

Contradictions are the catalyst of development and change. As activity systems evolve, change will occur as a result of the contradictions which take place when the rules of those systems become ambiguous, new tools are introduced into the existing context, or external factors impinge on an activity. Contradictions as such move activity systems away from a particular course on to a new path as adjustments are made by the subject to the new environment. They should not be construed as threats even though they may initially be disruptive. Issroff and Scanlon (2002) offered the view that contradictions are developmental in nature and contribute to organisational expansion. Kuutti (1996, p. 34) also agreed with the position of Issroff and Scanlon by positing the view that:

Contradictions manifest themselves as problems, ruptures, breakdowns, clashes.

Activity Theory sees contradictions as sources of development; activities are always in the process of working through contradictions.

Engestrom (2001) expressed a similar view but situated it in a historical context and concurred with the view that contradictions create an environment in which change is possible. Engestrom (2001, p. 137) highlighted the 'central role of contradictions as sources of change and development'. He continued,

Contradictions are not the same as problems or conflicts. Contradictions are historically accumulating structural tensions within and between activity systems.

The primary contradiction of activities in capitalism is that between the use of value

and exchange of commodities. This primary contradiction pervades all elements of our activity system.

Contradictions occur when practices that are conjointly part of the system and which are mutually dependent no longer sustain each other. This leads to a double bind situation in which the practices limit each other. Contradictions can occur in several ways namely:

- Between components of any activity system for example, between objects and rules or subjects and rules.
- Within components of an activity system for example between rules.
- Between activity systems for example conflicting aims between different departments in an organisation.
- From historical disturbances for example, between newly introduced modes of operation and existing rules.

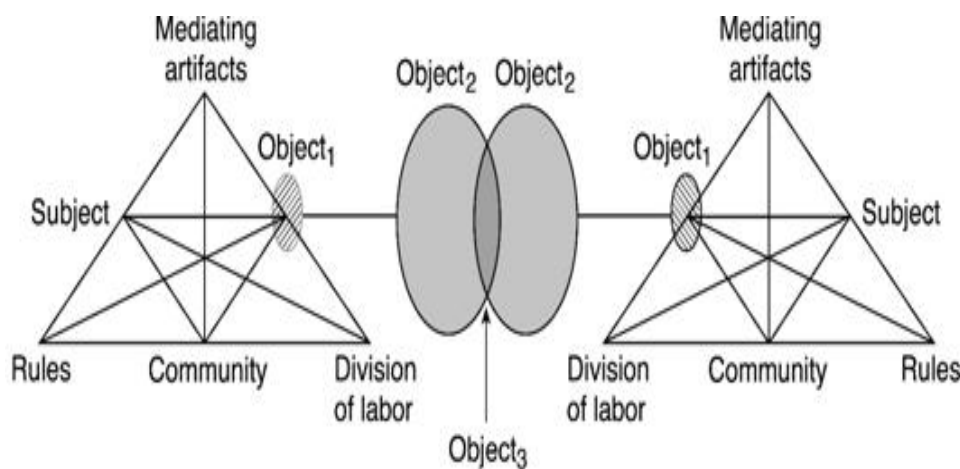
Virkkunen and Kuutti (2000, p. 303) also viewed contradictions as a source of development of new practices. They noted that the adaption of new tools would lead to contradictions that are viewed as disruptive to the activity but which hold the potential to create a new practice. According to the writers,

These contradictions are manifested in new kinds of problems, ruptures and disturbances in the activity system. The contradiction between the old and new ways of acting affects the way these problems are solved. There is constant tension between the expansive, future oriented solution and the regressive one that would mean a return to the old practices. The solutions to the problems gradually give form to a new practice that may eventually be quite different from the planned model of the new activity.

It must be noted that though most ruptures are overt demonstrations of contradictions within the system, some contradictions remain hidden beneath the surface and the persons are unaware of their existence or view them as normal and part of the status quo. As stated in the first chapter, these types of contradictions must be revealed to the members of the project team with the aid of an interventionist methodology.

The discussion in the preceding paragraphs has been concerned with an analysis of a single activity system and the tensions, contradictions and resulting transformation(s) that occur in such a social setting. Engestrom (2001) has produced a body of work that evolved from the analysis of a single activity system to the study of the exchanges and complex relations that develop when multiple activity systems interact. Figure 2.5 shows a representation of the interacting activity systems. This type of interaction occurs in a landscape in which there are multiple interacting agencies or groups; the workplace is a good example of such a landscape.

Engestrom (2001) studied a hospital environment in which several departments were simultaneously involved in the care of patients. He examined the various interactions, which created an environment that nurtured development and change; the change was driven by the structural tensions and contradictions experienced by the various agencies. The result was the development of systems which resulted in better patient care. In discussing the idea of multiple interacting systems, Engestrom posited the view that such third generation activity systems are open for further study and development.



*Figure 2.5 Multiple interacting activity systems Engestrom (1999)*

In third generation activity systems, a classification for different types of contradictions exists. Four types of contradictions are suggested. The first type is the Primary Contradiction. This occurs because of the internal conflict caused by the decision-making process. A case in point is the planning team's decision to proceed with planning issues despite the personal misgivings of the stakeholders in the face of uncertainty about the direction of government's policy on the issues of merger versus shared services.

The second type of contradiction, known as a secondary contradiction occurs when a new constituent that is foreign to the system enters the system and results in contradictions among the components that are preexisting. The net result of the introduction of the new object is the development of some form of resistance by the stakeholders who view the object or practice as threatening.

The third type of contradiction, the tertiary contradiction occurs when a superior or culturally more advanced object and motive is introduced into the activity. This type of contradiction has been evident in the planning process. In the project landscape, the planning office proposed a more sophisticated approach to managing staff and departmental practices through the creation of new departmental practices and the introduction of new posts, which would reflect current Higher Education practice and culture. There was resistance to this move, which was viewed as threatening by some staff at the institutions.

The fourth contradiction, the quaternary contradiction surfaces between the changing macro activity and its interaction with micro activities. In essence this represents a contradiction between different systems which are brought together and are interacting with each other. For example, one institution found it difficult to ascribe importance to the facilitating team's needs assessment survey given all the other activities that were occurring at the said institution. The planning team on the other hand still had the expectation that in light of the potential benefit of the assessment to the institution in question, the staff would participate without any reluctance.

### **2.7.3 Culture in Activity Theory**

At this point in our discussion, we need to explore the concept of culture in detail, given its importance to the study of activity. There are several definitions of the notion of culture based on particular philosophical approaches. According to Bruner (1996, p. 4),

Culture, then though itself man-made, makes possible the working of a distinctly human mind. On this view, learning and thinking are always situated in a cultural setting and always dependent upon the cultural resources.

He further supported the idea of the importance of tools to the cultural existence of any society when he stated the following:

Human functioning in a cultural setting, mental and overt, is shaped by the culture's toolkit of 'prosthetic devices'. We are a tool-using, tool making species par excellence and we rely on soft tools as much as digging sticks and stone choppers – culturally devised ways of thinking, searching and planning (Bruner *ibid*, p. 168).

Writing from a cultural psychologist's perspective, Cole (1996) also underscored the importance of culture and elaborated on the idea of tool mediation as a sociocultural phenomenon. He drew a number of conclusions, three of which are summarised below.

- Artifacts are not isolated elements of culture. They are part of a "hierarchy of levels that include cultural models and specially constructed "alternative worlds".
- "Artifacts and systems of artifacts" do not exist in a vacuum but exist in relation to a given situation, context or activity.
- "Mediated activity has multiple outcomes because it changes the subject in relation to others and the subject/other connection in relation to the whole situation as well as the medium in which the subjects interact".

Upon arriving at the above conclusions, Cole (1996, pp. 132–135) explored the ideas of culture from two different perspectives namely, "*culture as that which surrounds*" and "*culture as that which weaves together*". He drew on the Webster's dictionary definition of culture as "the whole situation, background or environment relevant to a particular event". In his discussion, he pointed out that Webster's definition did not distinguish between the "whole situation" and "that which surrounds" nor does it account for the definite relationship that exists between the two elements. On the other hand, the idea of context as that which weaves together denoted relationship; he provided support for this point from Birdwhistell by citing McDermott, (1980, pp. 14-15). Cole's (1996, p. 143) view of culture as a system is described in the following way:

artifacts and mind as the process of mediating behaviour through artifacts in relation to a supra-individual envelope with respect to which object/environment, text /context are defined.

He also proposed a garden metaphor in which the garden fuses the notions of culture and context to provide a new model for thinking about "culture and human development." Cole noted that the idea of the garden suggested the possibility of growth and development.

The argument received support when Cole discussed the role of mediational activity and pointed out that the subject is modified in relation to others while at the same time there is change in the subject/other as well as to the environment in which the self and others interact.

There is a nexus between the garden metaphor and the cultural interaction which occurs in a given social context. Cole (1996, p. 144) noted that the metaphor prompts one to engage in “ecological thinking”. In the ecological sense, the context is influenced by any single disturbance with a ripple effect being felt in the ecological space. This is also the case in activity system where disturbances influence all the major components of the system.

In this section so far, the discussion has focused on the importance of culture and tools in the mediation process. It discussed the importance of tools to cultural development and spoke briefly to the transformational power of tools. This idea forms an important part in the enquiry both at the individual and collective level of the population that will be investigated.

#### **2.7.4 The transformational effect of Mediation in Activity Systems**

The thrust of an activity is the transformation of the object into an outcome. This outcome may be a physical object like a new tool or it may be intangible for example a new idea or a reinterpretation of an existing idea. There are several interpretations of the notion of transformation and Davydov (1999, p. 42) concluded that

Transformation means changing an object internally, making evident its essence and altering it.

He believed that for transformation to occur there must be two processes at work namely the external operation on the object and the corresponding internal change. Davydov further noted that there are two kinds of activity, which correspond to the transformation that is discussed in the earlier paragraphs. The first is intended to change the external existing order of objects while the other is intended to bring about:

the realisation of their inner potential at understanding the conditions of origination of integral systems (Davydov, 1999, p. 43).

Wertsch (1998) posited a similar view on the idea of the transformational effect of mediation by tools. He noted that the dynamics of changes, which occur when new cultural tools are



introduced into an environment, are frequently very powerful. In this case not only are the objects transformed, but there is also a measure of internal transformation occurring to the subjects as well.

The use of tools within an activity system context is beneficial in allowing persons to control and manipulate the environment with the intention of meeting the needs of all involved. Users of such tool must possess an awareness of a number of elements which will affect the outcome of their work. In the first instance the suitability of the tool must be taken into consideration given that correct tools must be employed if a given result is desired.

Secondly, the skill set of the tool user must be assessed. If there is a lack of the appropriate skill set in the deployment and use of the tools, then there is the likelihood that the desired outcome will not be achieved or the achievement of the said outcome will require a longer than usual time. The incorrect use of tools in a group setting in which there is a shared goal will lead to conflict and ruptures. I cite an example from the project team. In the early days of the shared services project, there was a very heavy reliance on the use of manual methods in the execution of work related practices. A team member suggested greater use of the office computers, and information technology to rationalise the use of the meeting rooms and resources for example, shared equipment and other project specialist that were available to the team. The member recommended the use of an online calendar as an option and took on the responsibility of leading the technology adoption by the project team and developing an in-house training programme for managing the recently introduced technology. The introduction of the technological tools created disturbances in the work environment of the project team because they were unaccustomed to using the technology but ultimately the tools positively transformed the way the team interacted with the management of HEDU resources.

Human activity does not exist in isolation but is generated because of the needs of individuals or groups who strive to reach certain goals. Moreover, human activity possesses a life cycle based on iterative changes that are affected by cultural and environmental influences (Cole et al, 1997). An examination of Figure 2.5 shows the relationships between all of the components in the activity system. There is a relation among the subject, the object and the tool; the subject using the tool manipulates the object. During this process, changes may

occur in the subject, object or the tool. The change in the subject, object or the tool is known as transformation. This concept will be explored in a later section of this chapter.

The notion of the tool can be misleading if we take it at face value. A tool in this context is not limited to a physical entity, but includes, ideas, language, and gestures and so on (Vygotsky, 1978). Tools therefore, are a critical element in the scheme of activity, transforming and being transformed.

Cole (1996) emphasised tools and their importance. He noted that human beings have used cultural and historical tools as a means of regulating their interaction with the world and with each other. For Cole, the notion of tools is not restricted to a physical medium but incorporates other complex components that are mental and psychological in their composition. He pointed out that tools should not be restricted to “hoes and plates”. The discussion is taken to another level when he indicated that there is a historical side to the creation and use of tools by human beings. Tools are not only useful for the present but pave the way for future discovery and reuse by future generations.

Wertsch (1998, p. 29) added to the discussion by asserting that tools afford human beings the opportunity to solve problems. He summed up his view on tools as follows: “I and the cultural tools I employed did it.” Kaptelinin (1996, p. 53) highlighted another factor that influenced tool creation and use, namely the cultural influence of tools. He perceived tools as vessels that provide the cultural transmission of knowledge. He suggested that:

Tools and culturally developed ways of using tools shape the external activity on individuals and ...influence the nature of the mental processes (internal activities).

This view is further strengthened when Kaptelinin (ibid) drew support from Latour (1993) who emphasised that tools shape the goals of people who use them. In the modern context, the computer and the internet are two tools that radically transformed human society. They have become pervasive and spawned other types of technologies that have transformed the world. A case in point is the proliferation of Web sites that disseminate information that have been created by experts in various fields of endeavour. WebMD is one such site; it publishes medical information on diseases, their causes, and the type of treatments options and diets which are available. Users can access the site to educate themselves about the medical issues

which affect them and become more comfortable in dealing with their medical concerns as well as with the medical personnel who work on their cases.

Other prominent phenomena have emerged on the World Wide Web and their impact has been unparalleled. The emergence of social networking applications like Facebook, as well as the development of the ‘Apple generation’ who make constant use of i-devices, have created very complex social worlds which have improved access to information and provided twenty-four hour contact at the push of a button. The advent of social networking and Web 2.0 technologies has created a virtual world of multiple interacting activity systems which are used to solve given world problems. This was evident in the use of social networking sites to disseminate information and reunite families during the 2010 Haiti earthquake. The virtual communities with their tools, rules, division of labour and multiple objects are simply a microcosm of human activity outside the virtual world.

Vygotsky’s work added a psychological interpretation to the idea of transformation. He introduced two processes to the debate, namely internalisation and externalisation. These concepts articulate a view that explains the dynamics of the processes that occur when transformations take place within an activity. Internalisation as described in the literature (Engestrom et al., 1999b; Bellamy, 1996; Kaptelinin 1996) referred to the transformation of external activities into internal activities as a means of performing abstract operations on real objects. This abstraction can be viewed in the context of the personal engagement with mental simulations and development on new activities that are geared toward a desired outcome. Bellamy (1996, p. 124) described the process of internalisation in the following way:

.. through a process of internalisation of external activity, artifacts such as instruments, signs, procedures, machines, methods, laws, forms of work organisation, and accepted practices affect the kinds of mental processes that develop.

Externalisation as a concept presents the converse situation where internal activities are transformed to external ones when the need arises to modify the internal activities.

The discussion on internalisation versus externalisation reveals that separate analysis of these two processes can be difficult since they occur together in the mental processes that take place when transformations occur within a system (Vygotsky, 1978). Implicit in the

discussion has been the idea of skill development as it relates to the use of tools. As highlighted earlier, a tool in the hand of a person without the skill or the capacity to develop the skill is useless. It is important to note that the skills that are needed to make optimum use of some tools in given situations must be developed with the assistance of a more capable other. With the help of the more capable other, the individual moves from one level of competence to a higher level (Vygotsky, 1978). In the context of the research enquiry, that more capable other is the facilitator of the DWR sessions in which the project team was guided into the development of new tools that would enhance their work practices.

Some modern technological tools are designed in a way that permits the ease of use and the acquisition of new skills that are needed to solve given problems. This approach is very significant from a human computer interaction perspective. In this case, a built-in form of guidance and transmission exists; it is based on the designers' and programmers' knowledge, experience and skills. These persons in my opinion may also be considered as the more capable other who helps the user through the knowledge acquisition process. The current trend in "intelligent" computing will see the role of the computer as a more capable other as artificial intelligence becomes more pervasive in the world of information technology. Further discussion on this point is outside the scope of this project and belongs to the HCI or technology domain.

## **2.8 Application of Activity Theory to Work Environment**

Modern Activity Theory more and more is being applied to the study of problems that occur in the work environment. It is finding a place in Human Computer Interaction, Management, Medicine, Industry and Education among other areas. The strength of this theory, given its interdisciplinary character and appeal, permits a sociocultural investigation of people at work who solve problems using a variety of tools; it also examines the resulting transformation and learning that take place. The notion of learning at work and the resulting transformations that occur has been tackled by Engestrom et al (1999), Daniels et al (2007a, 2007b), Tuomi-Gröhn (2003, 2007) and Edwards et al (2009). Studies have also been conducted on teams in the workplace by Engestrom (1999), Kuutti (1999). The aim of these studies was to achieve an improvement in work practices through the use of Development Work Research.

Development Work Research (DWR) was deployed in an effort to create an environment and provide and/or develop the appropriate tools that would allow the participants to identify ways in which the current contradictions pointed *beyond themselves*. The central focus was facilitating the participants' in order to identify the potential for changes in the practice. In other words they may be guided into finding the "realisable 'ought' that is implicit in the 'is' of the current practice. The previous statement suggests that alternative practices are found in the investigation of current practices and could be spawned from the current practices as a means of development and change. Analysis of the work of Daniels et al (ibid) indicate that their research focussed on the interactions between activity systems and the resultant contradictions that were generated as a result of the said interaction. This in essence represents advancement on Engestrom's work which has been inclined to focus on contradictions within a single activity system even when the work was done in a multiagency setting.

### **2.8.1 Expansive Learning in the workplace**

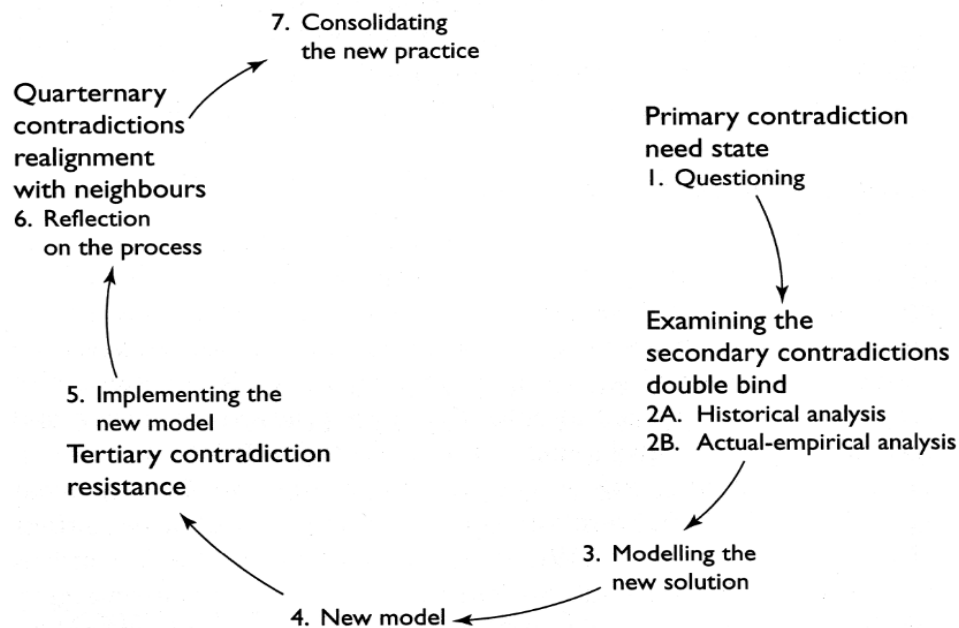
Engestrom (2001) pointed out a deficiency in standard learning theories that explain the processes involving personal and organisational practices which lead to the acquisition of new forms of activity as they are being created. Engestrom noted that expansive learning as an attempt to explore the change in personal and organisational learning is based Bateson's (1972) theory of levels of learning. In Learning Ø, learning is acquired by direct experience for example, if I touch an ice cube with my bare hands it feels cold; Learning I denotes conditioning where there is reinforcement through stimulus-response while Learning II symbolizes the acquisition of rule based behaviour. Learning II leads to the double bind which leads to Learning III where the individual or the group questions the meaning of the context with a view to building an expanded context.

According to Daniels et al., (2007b, p. 523):

.. by expansive learning, we mean the capacity of participants in an activity to interpret and expand the definition of the object of activity and respond to it in increasingly enriched ways. ...Expansive learning involves the creation of new knowledge and new practices for a newly emerging activity: that is learning embedded in and constitutive of qualitative transformation of an entire system.

Expansive learning occurs in environments where the participants in this case project management professionals are engaged in learning ‘a new thing’ that has not been previously created in the past. The inference of this suggestion is that knowledge acquisition by the persons involved is quite dynamic; they are in the process of redefining the problem as they work their way towards a given outcome.

This definition by Daniels et al implies a type of learning that transcends the traditional interpretation of learning and suggests the formation of a body of knowledge that is different from that which is often referred to as the Zone of Proximal Development (**ZPD**). The researchers take care to explain that expansive learning occurs in an environment in which learning is not always stable but is in a state of flux as the members of an organisation strive to realise equilibrium in the activity system to which they belong (Engestrom, 2001). This is a cyclical process represented by the model shown in Figure 2.6.



*Figure 2.6 Stages in Expansive Learning Engestrom (1999b)*

The model Figure 2.6 represents the view of how expansive learning is constructed. Engestrom (1999b) put forward the view that this type of learning moves from the abstract to the concrete. He suggested that there is the movement from the idea or concept to the point of implementation at which the idea becomes practice through epistemic or learning actions. The above model clearly shows distinct courses of action along the way to expansive learning.

In the first stage, expansive learning is initialised when the individual or group in an activity system become critical of certain aspects of the conventional wisdom and practice, which they may have taken for granted. They therefore question the relevance or benefits of such practice based on the tensions and contradictions they experience.

The next act is analysing. At this stage, the subjects engage in analysis from several points using the historical context from which the situation has arisen as a guide to constructing a view of the structure and operation of the system with which they engage. The result of the analysis is a generation of a model of the system. Engestrom (1999b, p. 383) explains modelling as:

...constructing an explicit, simplified model of the new idea that explains and offers a solution to the problematic situation.

Once the model has been constructed, the next process is the examination of the model to guarantee that there is an understanding of the structure's "dynamics, potentials and limitations" Engestrom (ibid).

The next stage in the process is the implementation of the model that has been transformed from an initial abstraction to a concrete entity that will be introduced into the practical situation as a conceptually superior entity compared to what previously existed. This leads to the next stage which is used to reflect on the new model or practice and evaluate its effectiveness, while the final step is a consolidation of the new model into an established form of practice.

The establishment of new work practices implies that there is the emergence of new tools with which the professionals are interacting. Four questions can be asked in relation to the new tools. They are:

- What are the professionals working with?
- Why are they using these tools?
- How are they using the tools?
- Where do they go (in terms of practice) with the use of the tools?

Since this study involves an exploration of expansive learning, the previously discussed model will serve as a useful tool during the Change Labs in analysing the learning taking

place in the planning office as the project officers' work on planning for the introduction of shared services.

## **2.9 The Theoretical Framework of the Development Work Research**

Development Work Research (DWR) is an interventionist methodology posited by Engestrom (2007) and based on the earlier work of Engestrom and Virkkunen et al., (1996) that used a series of laboratory sessions commonly referred to as “change labs” to study organisational change. It is prudent at this point to examine the “Development” found in the term DWR. Development as an idea can be an object of study but is also seen as research methodology. It has a formative aim and seeks to understand and describe evolving changes that are occurring in the participants as they move beyond themselves to bring new practices into being.

DWR is underpinned by the Engestrom's theory of Expansive Learning and Vygotsky's dual stimulation method and is organised to allow a facilitator to engage with the participants with the intention of removing the double binds that hinder positive changes in organisation practice. DWR is structured so that the participants engage with the object of the activity and emerge with a clearer understanding of the activity. The participants are provided with a set of analytical tools to assist in formation of new practices through the development of new concepts which underpin the new practices.

Double stimulation is based on Vygotsky's idea of scientific experimentation. The objective of double stimulation is the creation a structured environment where the participant is presented with a problem but provided with the tools that are needed to develop a solution. Vygotsky (1978) in explaining the concept of double stimulation presented the idea that the subject (child) is placed in an experimental context and given a task that is beyond his “present capabilities” but is provided with a nearby neutral object that can be drawn into the problem solving exercise. He further pointed out that the double stimulation approach goes beyond a simple stimulus-response exercise and explores the incorporation of signs that in essence change the characteristics of the operations being performed. Vygotsky (1978, p. 74) summed up the approach in the following way:



By using this approach, we do not limit ourselves to the usual method of offering the subject simple stimuli to which we expect a direct response. Rather, we simultaneously offer a second series of stimuli that have a special function. In this way, we are able to study the process of accomplishing a task by the aid of a specific auxiliary means; thus, we are able to discover the inner structure and development of the higher psychological processes.

Even though Vygotsky's experiment was with children, he was careful to explain that the double stimulation will "elicit manifestations of the crucial processes in the behaviour of people of all ages" (ibid, p. 74).

The Change lab as an interventionist methodology consists of series of sessions in which the researcher (interventionist/facilitator) and participants engage in a discourse that allows the participants to focus on the work and the practices that are part of their organisational routines. The objects with which they interact are conceptualised, explored and changed and reinterpreted and there is movement in the activity system as the object is often being transformed into a tool and or sometimes into a rule.

Engestrom (2007, p. 370) explained the Change Lab method in the following way:

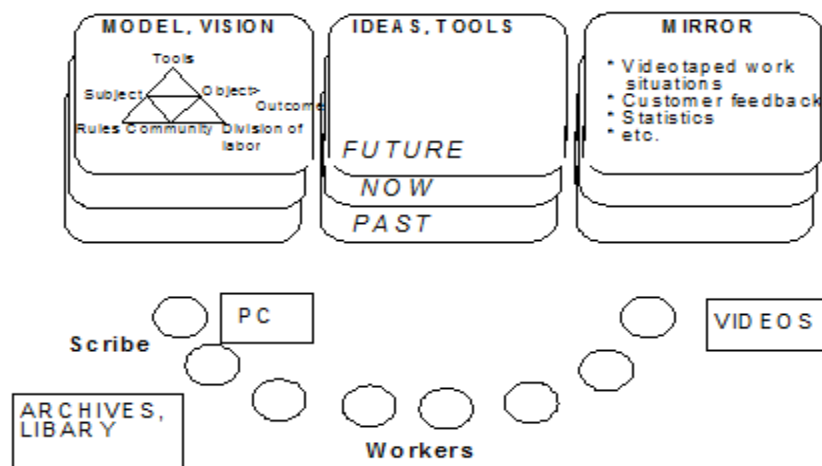
The Change Laboratory method develops work practices by the participants in dialogue and debate among themselves with their management, their clients, and – not the least - with the interventionist researchers. It facilitates both intensive, deep transformations and continual incremental improvement.

As expressed earlier, Change Labs are designed to give the participants access to a set of instruments with which they engage in order to examine in a very scientific way the tensions and contradictions or disturbances that form part of their practice. The participants are encouraged to work through the contradictions and disturbances in order to develop new forms of practice to eliminate the problems that hinder the smooth operation of organisational activities and functions (Daniels et al., 2007b).

The concept of double stimulation forms an integral part of the Change Lab and the key to its success is the spatial arrangement of the lab and the facilitation of the interventionist. The lab is centered on a 3 x 3 set of surfaces, which are used to represent the activity being studied. The surfaces are representative of the work activity occurring in a historical context

using the past, present and future as indicators, which will contribute to the discourse as the participants work through the process of exploring their problem space. The spatial arrangement of the lab is shown in Figure 2.7 where the three surfaces represent the following:

- The mirror surface displays the work practices and the problems that contribute to the tensions, conflicts and disruptions in the activity system.
- A model surface representing the activity system that is used by the participants to makes sense of the issues that lead to tensions and problems in the system. It makes use of historical data to give focus but also takes into consideration the present and the potential for change as well as creating a view of the future.
- The third surface in the lab is the ideas and tools surface which is situated in the centre between the mirror and model surfaces. This is used in creating the model of the new and emerging formation which is generated because of the cyclic processes that take place while the participants engage with the problem space.



*Figure 2.7 Spatial Organisation of the Change Lab (Daniels et al., 2007b)*

The first aim of the change lab is to facilitate the recognition of contradictions and their limiting impact on current activity. This is done through the use of the mirror data referred to in a previous paragraph. Next the researchers/facilitators work with the participants to assist them in transforming the everyday account of their understanding into the scientific account (concepts) of activity theory. As the process develops, new concepts are revealed and the problem is identified and articulated in precise Activity Theory terms. Next there is an exploration of the various relationships that exist within the system for example between the

object and the tools (material, mental or symbolic) being employed and rules that govern the use of the tools. The idea is to reveal the thinking that is entrenched in the practices as well as reveal the potential for change that exists in the practice.

## **2.10 The Zone of Proximal Development (ZPD) and the Change Lab – A perspective**

A critical aspect of Vygotsky's work was his use of the ZPD to explain how an individual acquires learning when faced with a problem. The idea of the ZPD has been adopted by scholars who subscribe to the activity theory paradigm and has been modified and applied to learning in activity systems. In this section, I will present a view that seeks to explain the learning that occurs in the Change Lab method from the perspective of the double stimulation and the ZPD based on Engestrom's model applied in the context of expansive learning.

There is discussion in the literature on the ZPD and its implication for contemporary educational thought. In a discussion of this issue, Daniels (2001) engaged in a critique, which indicates that there is the potential for multiple views of Vygotsky's approach to the ZPD. Wells (1999) and Moll (1990) cited in Daniels (2001, pp. 55-60) indicate that there has been a change in focus over time by Vygotsky. Moll (ibid) suggested that the focus of change within the ZPD should concentrate on:

the creation, development and communication of meaning through collaborative use of mediational means rather than on the transfer of skills from the more to the less capable partner.

Daniels though acknowledging Vygotsky's shift in focus posits the view that Vygotsky's fundamental position remained unchanged but the difference in emphasis may be "attributable to changes in the social, political and professional circumstances in which he was working".

The discussion of ZPD up to this point does not provide the framework for exploring expansive learning in the context of CHAT. The reason is that the discussion has only explored the learning as an individual experience. The idea of the ZPD has been applied to the acquisition of knowledge using the home school differences as well as the collective versus the individual. What is noteworthy of both positions is that they have moved the ZPD

fully into the realm of the sociocultural where there is the interaction of the various actors and tools in a mediational process. Chaiklin (2003, p. 41) noted that the ZPD is meant to be applied to “any learning task” and referenced the work of Tharp and Gallimore (1998) to support the view.

Engestrom (1987) brought a new approach to ZPD by using the expansive learning model as a ZPD. According to Engestrom (1987, p. 174), the societal view of the ZPD can be defined as:

the distance between the present everyday actions of the individuals and the historically new form of the societal activity that can be collectively generated as a solution to the double bind potentially embedded in the everyday actions.

It is a view to which I subscribe since it employs the process of double stimulation and the use of a facilitator to assist the participants as they engage with a new problem and acquire a new level of learning and development while seeking to find solutions to problems in the social landscape.

In explaining the idea of the ZPD in the expansive learning context in which activity is paramount, Engestrom (2001) noted that tensions and contradictions provide the motive for a journey through the ZPD. According to his viewpoint, the journey starts with contradictions that lead to disequilibrium and cause the participants to question the existing practices; as a result, they seek to develop and establish new practices. The group setting provides the context for collaboration with the aim of introducing change into the existing state of affairs.

Engestrom (2001, p. 137) further stated that the journey through the ZPD continues until expansive transformation is reached when:

the object and the motive of the activity are reconceptualised to embrace a radically wider horizon of possibilities than in the previous model of the activity.

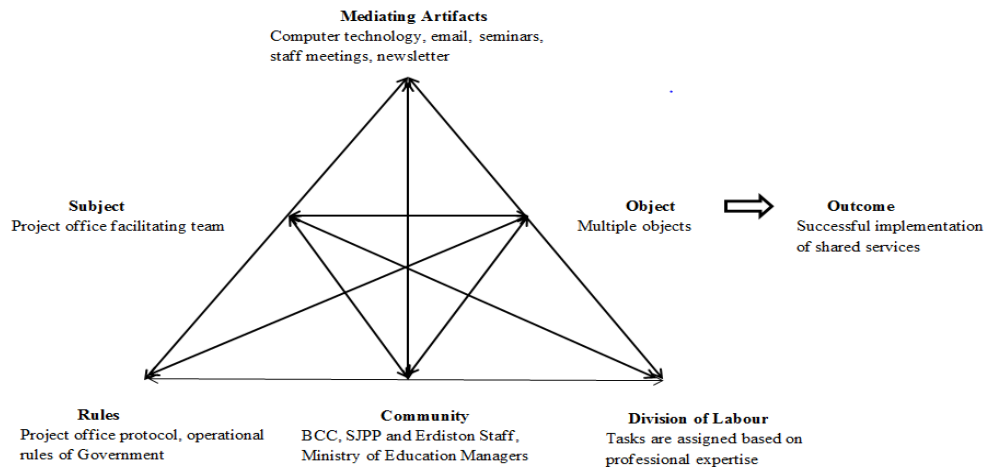
When the ZPD is viewed in the context of an expansive learning environment, it speaks to the need of a reconceptualisation of the term from Vygotsky’s individual account. Tuomi-Gröhn (2003) underscored the need to emphasise a new definition of the ZPD which states that the complete cycle of expansive transformation as shown in Figure 2.5 is a collective journey through the ZPD of the activity. For support they cited Engestrom (1987). Tolman (1999)

also supported the above view noting that Engestrom's view "comes close to the mark" with respect to describing the socially mediated nature of human learning.

In evaluating the DWR approach, a number of characteristics become evident. In the first instance, the process of learning with the aid of DWR is based on a reflective and systematic analysis. It also provides the opportunity for participants, both researchers and participating professionals, to interpret the object in enriched ways. This is achieved through a marriage of 'everyday account' with the 'scientific' aided by the use of the mirror data which was discussed in a previous section. The outcome is the emergence of new practices which were born out the learning challenges with contradictions as the source of change.

### **2.11 Application of Activity Theory to the project team context**

In Section 1.5 of chapter one, the project team was described as being constituted of members who came to the project with varied specialties, histories, professional experiences and viewpoints on the approach to the implementation of shared services. In activity system terms the group could be characterized by multivoicedness, historicity, being goal driven and struggling with a contradictory and changing environment in which they were expected to engender change. When the structure and operation of the team was brought into focus, the team could be viewed as an activity system. In this case the **subject** (the project team) sought to implement shared services (**outcome**). Anecdotal information suggested that the group was working on multiple **objects** using a variety of **tools** to assist them in their task. There was a clear division of labour which was governed by the rules of operation of the project office as well as government's statutory requirements (**rules**). They interacted with other stakeholders who included the administrative, teaching and technical staff of the three colleges involved in the project and the Ministry of Education (**community**). The project team's work took place in a very complex and rapidly fluctuating environment. Figure 2.8 is a general representation of the activity system.



*Figure 2.8 Activity system view of the team facilitating shared services*

## 2.12 Responding to criticisms of Activity Theory

Despite the increasing popularity of the Engestromian flavour of Activity Theory in the west, there are some questions being raised by critics with respect to its ontology, philosophical underpinning, and its triangular representation of activity systems. I shall now discuss some of the concerns raised by the critics and explore possible responses to the questions that have been raised in the literature by Bakhurst (2009) in his reflection on Activity Theory with special reference to the work of Engestrom.

Bakhurst's suggested that the concept of activity was not a fixture in modern western thought. He contended that its use in philosophical and sociological circles raised a number of questions. Bakhurst noted that from a philosophical viewpoint, there is no western theory of activity and he wondered whether a general theory of activity was at all possible. He indicated that some forms of activity raise some "philosophically interesting questions while others do not" (Bakhurst, 2008, p. 198). He summed up the issue in the following way:

Philosophical inquiry may be helpful in addressing some aspects of some of these things. But how could there be a theory of activity per se, that was not so general as to be utterly useless? This is a question to which activity theorists must have an answer (ibid).

Bakhurst further asserted that attempts at synthesising Activity Theory in a western context bear no congruence with the theories of Ilyenkov and many of the Russian thinkers whom we

associate with the early development of Activity Theory. His reference to Ilyenkov is used to question the notion of development arising from contradiction in a dialectical sense and to suggest that it is not at all a viable explanation. Noting his difficulty with the notion of Activity Theory, he stated, “I am uncertain that there is anything that warrants the name ‘Activity Theory’ or even that there is a stable view of what the activity approach might be”, (Bakhurst 2009, p. 198). In addition to the foregoing issues the following matters were also raised by Bakhurst (2009, pp. 201-209) in his analysis of the issue.

- i. The need for a sustained theoretical reflection which examines the “scope and limits of the Activity Theory approach”.
- ii. The problematic nature of activity which gives rise to the possibility of multiple interpretations.
- iii. The question as to whether the Activity Theory model captures the general structure of activity systems.
- iv. The assertion that the Activity Theory model does not speak to the relationships that exist among the various components.
- v. The resolution of activity into triangles and lines is problematic since the lines do not adequately express a generalised form of relationship between the various components.

The issues raised are important to the further development and evolution of Activity Theory and should be addressed as Activity Theory in Western society matures and evolves. I shall now address the given concerns.

The assertion that Activity Theory triangles represent the sum total of Activity Theory does not stand up to scrutiny since diagrams are usually just a crystallization of ideas presented in a visual manner. They can never fully reflect the complexity of the idea; they are in most cases simplified representations that are aimed at the clarification of ideas. In his work Engestrom (1999) states that the triangular models are just simplifications and in an unpublished mimeograph Engestrom noted that the assertion in relation to the triangles would imply an isolation of the triangles from their intended context. Engestrom further makes the case for his interpretation of Activity Theory by citing Leont’ev (1978, p. 50) which states

In other words, activity is not a reaction and not a totality of reactions but a system that has structure, its own internal transitions and transformations, its own development.

I would argue as well that Bakhurst has overlooked the importance of context in his reflections. Political and social context are critical elements in the discussion of Activity Theory. Bakhurst's quest for an overarching structure for activity does not refer to the role of the social and political context in his discussion of activity. It must be noted that relationships, which exist in different political contexts, create room for different pathways for the theorisation and development of modern day Activity Theory. Consider the following societies or political systems – society **A** which is based on totalitarian rule; society **B** that is democratic and conservative and society **C** which is also democratic but in which there is a high level of liberalism. In the given scenario, there will be similarities in the structure and intent of activity but there will also be differences based on the respective social and political systems. The inference therefore is that it is important to develop an interpretation activity using multiple perspectives.

Bakhurst however attempted to balance the critique by making the point that the Engestromian approach is still a viable way to explore the notion of development and change. He declared his admiration for the Engestromian approach to Activity Theory and its intent to “transform the world for the better” but insisted that if Activity Theory is to be progressive then the concerns raised about it must be addressed through further research and dialogue.

Peim (2009) also discussed what was viewed as a weakness in the Engestromian version of Activity Theory. He wrote about the local nature (character) of activity systems and pointed out that the limitation of Activity Theory is its inability to engage with the relationships that exists between the local systems and the larger social systems to which they belong. It is my belief that further work on third generation activity systems which involves multiple interacting activity systems will eventually address this issue.

Davydov (1999) also drew attention to the vigorous debate on the issue of the collective versus the individual. He viewed the topic as one of the unsolved issues in Activity Theory and posited the view that there is uncertainty about the relationship that exists between the collective and the individual activity or between the collective and individual subject. There is on-going work on resolving the issue. According to Davydov (ibid) the term collective subjects has been coined to explain the notion of collective engagement in Activity Theory. He cited Lektorsky (1994) who gave support to the idea of the collective subject and



contends that the “collective subject” does exist apart from the individual and finds its expression in external collective activity rather than through individual consciousness.

Sawyer (2002) also perceived the group or collective and the individual as separate abstractions and as such analytic units. He further stated that a direct inference is possible from the separation; it is that the evolving social structures lend themselves to retroductive analysis and explanation. The outcome of adopting the position mentioned above is that it becomes “methodologically necessary to study the emerging situated practices” (Sawyer, *ibid*, p. 293).

I support Sawyer’s view on collective action and refer to the metaphor of sports fan behaviour at sporting activities as a means of elaboration. Let us consider a Premier League football match. When one looks at the supporters who watch the match, it seems that the individual becomes less dominant and subsumed into the group and the collective becomes paramount in the effort to motivate the team through chants and songs (a collective activity). It appears from anecdotal evidence that the group learns how to behave and respond to given situations as it seeks to urge the team on to victory and consequently, the individual becomes less dominant but finds expression in the collective activity with the goal of motivating the team.

### **2.13 The Implications of the Literature Review for this Study**

Every research project should be reinforced by compelling philosophical, ontological, epistemological and theoretical support. Chapter 2 reviewed the literature in order to attain an understanding of each of the aforementioned areas of support. Of key importance was the establishment of a rationale for using activity theory as the unit of analysis for the study that was undertaken.

Neuman (2006) explored the goals of a literature review. They are:

1. To demonstrate a familiarity with a body of knowledge and establish credibility.
2. To show the path of prior research and how the current project is linked to it.
3. To integrate and summarise what is known in an area.
4. To learn from others and stimulate new ideas

The literature review of this study was intended to achieve the aforementioned goals.

Neuman (*ibid*), also noted that the literature review should be premised on the assumption

that knowledge accumulates and that people learn from and build on what others have done. The remainder of this section explores what the various contributions mean for this study and how they have informed my thinking in relation to my research questions.

This literature review was concerned with an examination of the various approaches to the study of human activity in context. The chapter examined contributions from Systems Thinking, Community of Practice and Cultural Historical Activity Theory. In the preliminary stage of the literature review, the contributions provided an overview of the issues that affect socio-cultural interaction in the organisation. As the interaction with the literature continued, the emphasis narrowed and I was able to focus on the issues that would be important to the study.

Prior to the commencement of the literature review, I had an idea of what I wanted to investigate. However, the initial questions in my mind were not well structured – there was an element of ‘vagueness’ resulting in very broad based questions. The literature review pointed to the importance of embracing a methodological means of studying the highly complex sociocultural interaction which I observed in the office of the Higher Education Development Unit. In addition, the contributions allowed me to analyse the three approaches select the one that provided the best unit of analysis and refine the focus of the questions as revealed in Chapter 1.

The work environment which sparked my interest in the study of organisations presented a very intriguing challenge. What I encountered was a small project team working in an environment in which they were underlying invisible contradictions. I was not in a position to know what those contradictions were and I felt that I could only discover the identity of those contradictions by working with the personnel so that they would reveal the contradictions to themselves. To achieve this I needed to find a theory and an associated methodology that would allow me to stimulate the thinking of the team members as they examined the contradictions in an environment involving three structurally different institutions.

I therefore needed a way of digging beneath the surface. What Activity Theory as outlined in the literature review gave me was a set of analytical tools which I could use to relate the structure of the organisation to practices that were occurring in them. I was able to analyze

the rules, division of labour and community and understand them in relation to what the persons were doing while trying to achieve their common objects or non-common objects. Additionally, Activity theory provided me with an interventionist strategy for achieving that aim. As a researcher I could provide preliminary data which I would have collected and structured (keeping the activity theory in mind). I could then utilize the process of double stimulation to reveal the underlying contradictions which were invisible to me as a member of staff.

As a researcher, my engagement with the literature and the formulation of the research questions stated in Chapter 1 resulted in personal change and transformation. The literature search and contributions found therein led to a personal transformation in the way I thought about the questions. My thought process became clearer and I was able through interaction with the literature, to evolve my thought processes from the everyday to the scientific, with respect to the issue of organisational change and learning.

I have also grown professionally after my interaction with the literature. I am not quick to censure my colleagues with respect to their practices, because I have developed an understanding that overt behaviours might have their genesis in underlying tensions and contradictions which may be in need of intervention.

Having previously subscribed to the theory of behaviourism and then to constructivism my transformation from these theories to an engagement with activity theory and the associated methodologies became final after a deep exploration of the issues that surround learning using a Vygotskian perspective. My thinking is now positioned firmly in the activity theory paradigm having been transformed through and interaction with the literature on the subject. Like the participants in the study, I have also had to debate and negotiate with myself to reach the stage where I have embraced CHAT as a most suitable means of studying organisational change.

A very important and compelling part of the literature review was the interaction with the contributions which were critical of activity theory. Confronting those issues and examining the responses were pivotal points in my engagement and was an attempt to bring balance to the discussion.

## **2.14 Conclusion**

This chapter sought to engage with the literature and to discuss the current thinking relating to the most suitable approach for studying the organisation in context. It explored current approaches to studying organisational change and concluded that although there was merit in using the various approaches, they were limited to studying specific aspects of the organisation. As a result, they were inadequate to cover the complex sociocultural interaction in which there was any level of mediational activity. A case was made for using Activity Theory as the unit of analysis for the current project given its strengths of object orientedness, multi-voicedness, historicity, development through contradictions, expansive transformations and the broad framework it provides for studying social cultural interaction in the macro level of organisation or the micro level in a team setting. The chapter also explored DWR and its effectiveness for facilitating individual and system change using the Change Lab process.

In balancing the discussion, the questions raised by Bakhurst (2009), Sawyer (2002) and Peim (2009) with regard to the theoretical nature and present practice of activity theory were highlighted and discussed. The discussion in this chapter also centered on an analysis of the literature relating to organisational change and Activity Theory. The next stage in the process is to examine the methodological implications that supported the design of the data collection phase of the study. These will be addressed in the next chapter.

## **CHAPTER 3 METHODOLOGY AND DESIGN**

### **3.1 Introduction**

What is important is the development of a methodology that coheres with the theory and allows me to answer the research questions stated in Chapter 1. This chapter will focus on the methodological issues that are critical to the implementation of the research enquiry. It will explore the theoretical aspects of developing the methodological approach that guided this research enquiry. Consequently this chapter will discuss the structure of the research project, data collection techniques and other facets of research to ensure that I have engaged in a valid study.

### **3.2 Methodological considerations**

Cohen et al (2000) discussed possible approaches to conducting research. Using a metaphor from photography, they posited the view that research is observable through “three significant lenses” namely, scientific and positivistic methodologies, naturalistic and interpretive methodologies or critical theory methodologies. They drew support for the previously stated position by referencing the work of Hancock and Hughes (1995, p. 21) and they noted that

...ontological assumptions give rise to epistemological assumptions; these in turn give rise to issues of methodological considerations and these in turn, give rise to issues of instrumentation and data collection.

The project as conceptualised is based on “real world” research using an interventionist methodology. According to Robson (2003, p. 3), real world research is concerned with the:

actual context where whatever we are interested in occurs whether it be an office, school, hospital, home, street or sports stadium.

This type of research transcends the technical exercise of gathering data and is intended to provide an understanding of the “real world”. Cohen et al (2000) cited the work of Hancock and Hughes (1995, p. 21) and noted that any form of research should be:

informed by how we view our world(s), what we take understanding to be and what we see as the purposes of understanding.

As a researcher, I subscribe to an ontology (Sobh and Perry, 2006; Reed, 2009) that is based on the idea that reality remains independent of one's thinking and is observable; the set of assumptions governing this enquiry is based on the reasoning that there is an organisational reality and a project team, which is comprised of a complex interplay of the subjects, object, communities and rules. It is not possible to come a full understanding of the truth about the interplay but it is possible to gain clearer insights over time through the iterative processes of research and intervention. Reed (2009) and (Pring, 2000) concurred with this view and contended that research should be aimed at understanding the social actors in context (Bryman, 2001) by using a varied mix of data collection, which combines ethnographic, textual, historical and structural data. Bodgan and Biklen (2003) noted that in the context being described, the researcher must bear in mind two ideas. They are that social facts are rooted in an objective realty and that reality is socially constructed.

The remaining sections of this chapter will explore Development Work research as a methodology for gaining an insight into the relations that circumscribe the professional world of the project team; those relations are critical the task of enhancing the work practices of the project team.

### **3.3 The Research Strategy for the Enquiry**

Chapter 2 – Part II discussed Activity Theory and argued the case for its use as the supporting framework for this study. A number of studies have been conducted in the areas of science, management and education using Activity Theory as the supporting framework. Daniels et al (2007a, 2007b) used Activity Theory as the basis for their work on 'learning in and for cross-school working'. Their project explored professional learning and adopted the Engestromian Development Work Research methodology while the theoretical framework centred on the early work of Vygotsky.

DWR and the Change Lab were applied to the various cases to encourage the participants to engage in collaborative activities across institutional boundaries and to enhance the work practices of the participants. A key aspect of the work was the focus on reflecting on one's past, present, and future work practices with a view to determining weaknesses and providing a methodology for 'turning those weaknesses into strengths'.

This research project also employed the Engestrom Change Lab with the project team of the Higher Education Development Unit to examine their work practices in a very complex environment involving three colleges. This study provided an opportunity for engagement, given the team's multiple view points, historical experiences and interests – all of which contributed in some form to the execution of their duties with respect to the project work.

In addition, the study was designed to assist the project team in changing the way they interacted across the institutional boundaries so that the policies and plans of the Ministry of Education could be implemented with a minimum of disruption in the work environments of the colleges.

### **3.4 Planning for DWR Intervention**

At the heart of the study was an exploration of the expansive learning that would occur when the project team explored their work practices within a Development Work Research environment in the form of the Change Lab. As noted in the preceding chapter, the Change Lab is a methodology that is being increasingly employed as a means of studying work practices with the aim of helping the participants change and enhance the way they execute their work tasks.

The initial preparation was based on a set of guidelines advanced by Engestrom and Hakkarainen (2003). These guidelines brought focus and assisted in the preparations for the Change Labs. The guidelines were:

1. Select a piloting field which has strategic advantage.
2. Organise a Change Laboratory setting.
3. Determine who the participants are.
4. Decide how to obtain commitment from them to the change experiment.
5. Decide on a location for the meetings.
6. Decide on the mirror data that will be gathered.
7. Select someone to assist with preliminary analysis of data (looking for disturbances).
8. Select the persons to whom the Change Laboratory participants will present the proposal of new practices.

An important part of the process was the use of stimulus or mirror data throughout the DWR process. This data had many sources and included the following:

- Preliminary data that was collected from the participants of the Change Laboratory.
- Data collected by the researcher in preparation for the initial Change Lab.
- Data obtained from the analysis of the Change Lab interactions.

As stated in the theoretical discussion of Activity Theory in Chapter 2, the role of the mirror data was to focus the participants on aspects of their work experience and practices that were problematic. As a tool, the mirror also provided an opportunity for the development of novel solutions that targeted the specific issues that were uncovered during the Change Lab sessions.

In the Engestromian model of the DWR, observation and interviews were the usual means used to collect mirror data for the Change Lab. This study employed a modified approach making use of multiple data sources and multiple methods of collection. The data was collected from the leaders of the institutions and the director of the project who were interviewed, as well as the operational staff of the institutions who participated in a survey (See Appendix B).

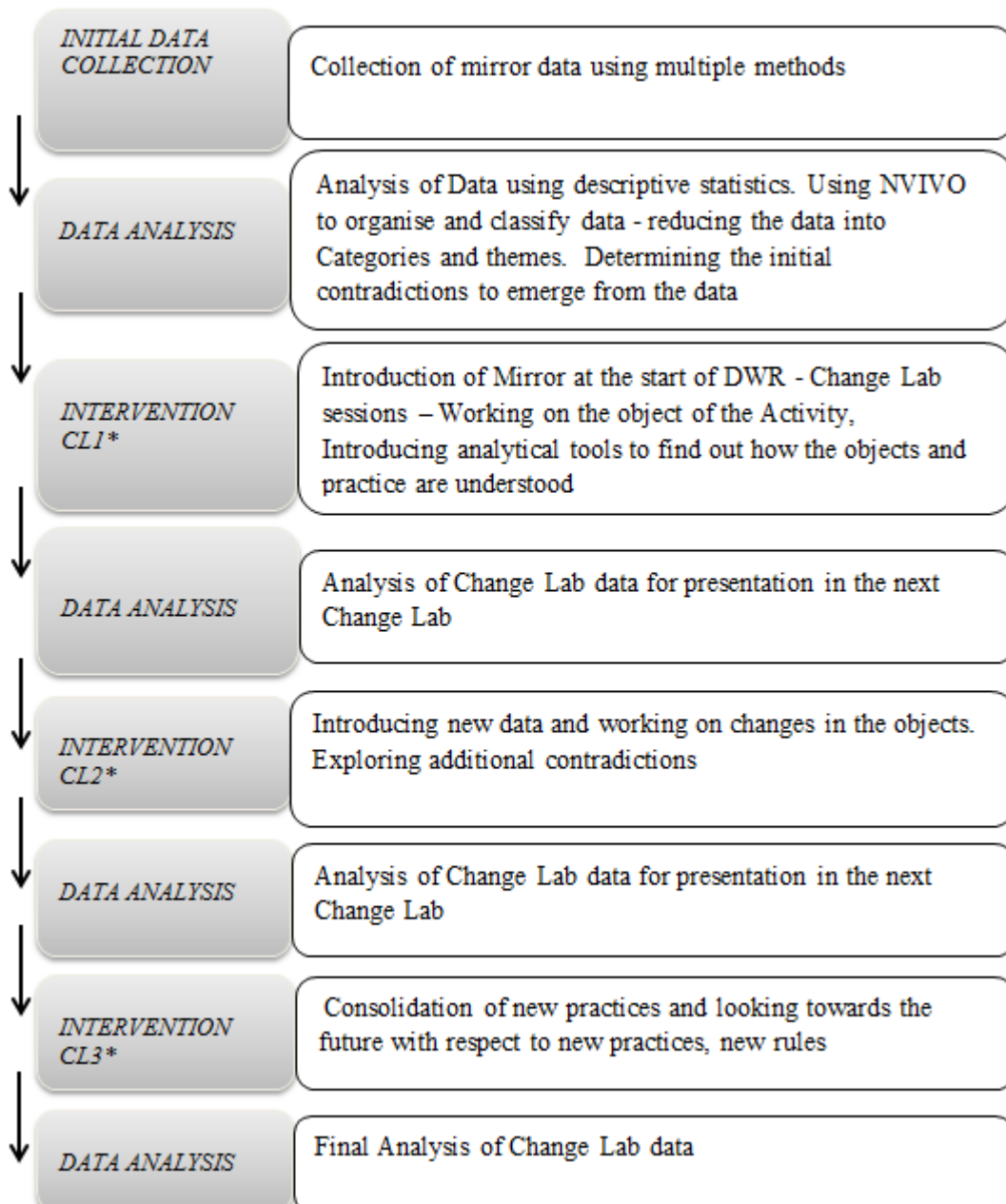
In addition to the aforementioned form of data collection, mirror data was also collected using a focus group session held with the project team. The objective of assembling the focus group was to foster a comfortable atmosphere that allowed the participants to freely discuss their opinions, attitudes, ideas experiences on the matter being discussed (Kruger and Casey, 2000; Williams and Katz, 2001). The focus group was comprised of the six members of the project office team. Careful consideration was given to conducting the focus and was based on the protocol summarised from Taylor-Powell (2002) on form RF2 in Appendix (D). The objective of the protocol was to ensure that focus was maintained and the session was productive in terms of the participation where the group freely exchanged ideas and engaged with the topic of the discussion. The protocol was also influenced by the work of Fontana and Hay (1994), (Neuman, 2006), Altrichter et al, (1993), Bell (2005), Chambliss (2010) and Merton et al (1956) cited in Fontana and Hay (1994).

The rationale for this approach was to provide the participants in the initial Change Lab with stimulus data that presented a big picture of the environment (people and processes) which were under the influence of their work practices using a non-traditional approach. In the Engestromian Change Labs, mirror data is collected using interviews with the key stakeholders and observing the situation that is being investigated. In this study I have



gathered information using the methods described in preceding paragraphs. This method represents a different way of working with the collection of mirror data and can be viewed as an original methodological contribution to the generation of mirror data for the Change Labs.

Using the guidelines of Engestrom and Hakkarainen (2003) the following plan for the DWR intervention was devised.



\*CL1, CL2, CL3 are labels for the Change Labs

*Figure 3.1 Plan of the DWR Intervention*

### **3.4.1 Roles, Responsibilities and Tasks**

The very involved and dynamic nature of the DWR interventionist methodology necessitates its own division of labour with all responsibilities, roles and task being clearly delineated.

The Change Lab was conducted by the researcher with help from a scribe and an observer who provided feedback on how the first change Lab was conducted. As the sole coordinator, the researcher's responsibilities included the following:

- Obtaining permission to conduct the intervention and working out the terms under which the research could be conducted.
- Managing the various aspects of the intervention including data collection, personnel (videographer, scribe, and stenographer).
- Moderating the sessions.
- Analysing data and preparing new stimulus data and conceptual tools for the subsequent session.
- Conducting follow-up to secure new data or clarify/validate what was collected.

The project team's role was vital to the success of the intervention and the expectation of the moderator was that the team would work collaboratively under the guidance of the moderator to achieve the aims of the various sessions. In some instances they were asked to review data and make judgments for example, review the descriptive statistics in the initial Change Lab session and draw preliminary conclusions. Additional tasks included working on the design of the new practices using the conceptual tools that were presented by the moderator.

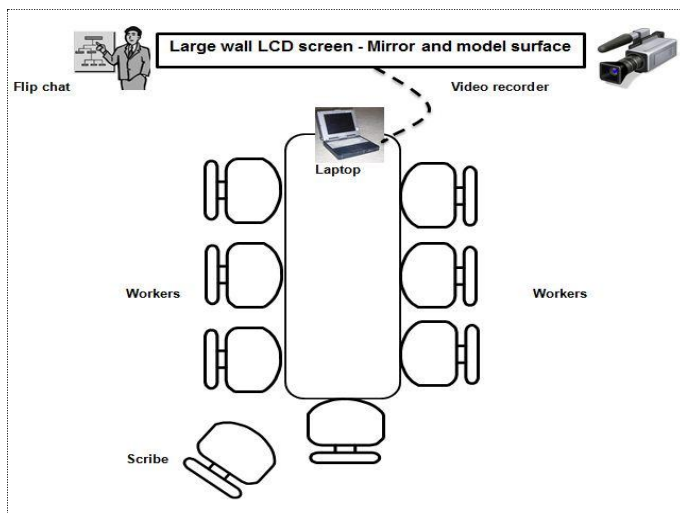
### **3.5 Conducting the Change Labs**

The project team was the focal point in the DWR labs; each member had a voice, each member had a story and it was important that the members participate not in a reactionary way (Edwards et al, 2009) but as contributors to the session based on their interaction with the emerging discoveries in relation to their work.

Three labs were scheduled with the project team of the Higher Educational Development Unit. The aim of the Change Labs would be to investigate the tensions, contradictions and expansive learning which occurred in the project office. The Change Labs were scheduled to be conducted in the conference room of the project office because of its preference by staff.

The size of the room was a constraint but it was sufficiently adequate for the DWR. I strove to maintain the Engestromian configuration of the room as much as possible. Figure 3.2 shows the room configuration used in the Change Labs.

As previously noted, the project team was quite important to the conduct of the session but the researcher was also important. The researcher would guide the sessions and assist the participants in identifying the contradictions in their practices and work with the transformations that occurred as a result of the intervention techniques. One of the researcher's roles was to assist the participants in adjusting their use of language from the everyday to the formal Activity Theory language (scientific) as they worked through the process of thoroughly analysing their work practices.



*Figure 3.2 Change Lab configuration using the HEDU conference room*

The research plan was to commence the DWR with welcome and introductory remarks by the facilitator and an explanation of the process and the function of the model surface. This would be followed by a PowerPoint presentation of the mirror data using images and statistics to highlight important aspects of the mirror. The objective was to focus on the environment in which the project team was operating and present them with a series of questions which would lead (through discussion and negotiation) to an in-depth examination of their work environment. The intent of this approach was to reach consensus on the need for change and development. Figure 3.3 is the approached used in the Change Lab. The underlying motivations during the Change Labs was for the project team to achieve their 'realisable ought' through dialogue and debate.

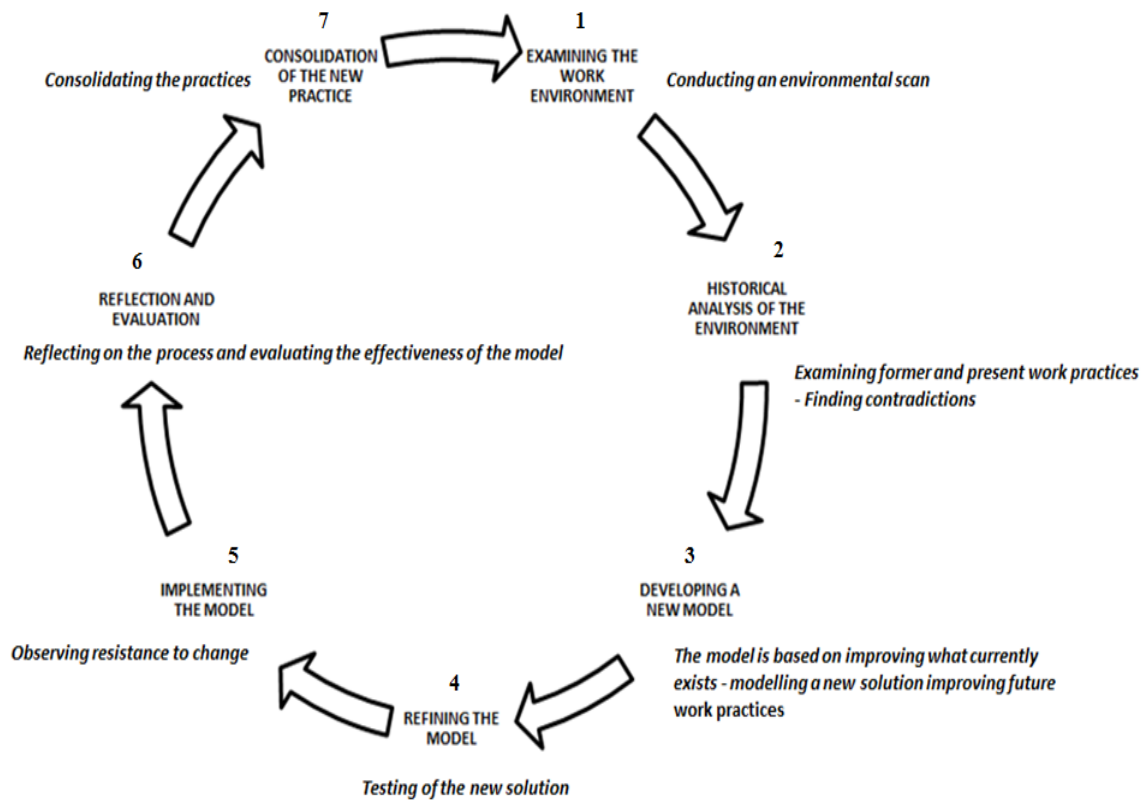


Figure 3.3 Expansive Learning Model used in the design of the Change Labs

A limitation in planning and executing the DWR sessions was time. The director and team only agreed to one and a half hours per session based on the time constraints that existed in their busy schedules. Given this condition, the three Change Labs were adjusted to ensure maximum interaction and output in the time allotted.

### 3.5.1 Change Lab 1

In the first Change Lab, the project team was assembled as an activity system and presented with the mirror data that was collected using the methods described in section 3.4. As stated this data was collected from the participants themselves as well as from members of the neighbouring activity systems with which they interacted on a daily basis in the execution of their work tasks. The objective was to reveal any contradictions which manifested themselves as tensions, ruptures disturbances or breakdowns in the system (Kuutti, 1996; Engstrom, 1987). Additionally, the team would be engaged in determining what objects they were working on in order to expand and enrich those objects to bring about change into the work environment.

The project team operated in a bureaucratic work environment. Their practices were steeped in a civil service mind-set which made it difficult but not impossible to deviate from the “normal practice” of operating within the government structure. The team also functioned against a background where it was affected by frequent changes in leadership at the ministerial level. This often led to uncertainty about the direction of the project. In addition, the team was engaged in overcoming the obstacle of implementing the share services project concurrently in three colleges which possessed distinct *modus operandi* and organisational cultures. The mirror data also pointed to a number of challenges (problems) present in the project team landscape; these are discussed in the following paragraphs.

The project team was eager to implement the shared services and expected that as a Ministry of Education unit, their status would have made the task easy. This was juxtaposed against resistance to change encountered in the organisation. The team felt that the relevant project information and update were being communicated. This was in direct opposition to the claim by operational staff of the institutions that the data was not reaching them in a timely manner or not at all.

There was the assumption by the project team that given they were a unit of the Ministry of Education that the project phases would be implemented without question. This view was held despite the autonomous nature of one college and the semi-autonomous nature of the other two (they possessed the power to question). There was the need for a simple means of information dissemination versus the bureaucratic method that was currently in operation.

A central part of the Change Lab strategy was the use of dual stimulation to provide the vehicle for finding solutions to the aforementioned challenges. In the context of DWR, dual stimulation was employed to focus the project team on the object of the activity and the different interpretation by the participants. Additionally, analytical tools to assist the participants in achieving an understanding of their practice and creating the environment to develop new work practices were introduced.

### **3.5.2 Change Lab 2**

In this lab, new stimulus data was introduced to focus the team on refining the object of their work and working on creating a conceptual model of what could be used as a future

enhancement to the environment. The team would be focussed on meeting the need to develop new tools for working in the problem space and enhancing the quality of work and the resultant output. The objective was to devise a new practice that would lead to a change in the work environment. An initial version of the practice (model) was developed and modified through discussion and negotiation.

### **3.5.3 Change Lab 3**

In the final Change Lab, the team was presented with the final set of mirror data which concentrated on showing the development of the team with respect to the movement of the object and change in practice. The project team worked on the final refinement of the model, enhancing it as a new practice that would be added to the fabric of the organisation. The session culminated with a segment where project team engaged in reflection about the future with respect to the further enhancement of their work practice.

## **3.6 The Methodological Implication of Activity Theory with Respect to DWR**

As noted in Chapter 1, Activity Theory is a powerful descriptive framework for exploring the very complex social interactions that occur in diverse social landscapes. Given its multi-disciplinary character, the adoption of Activity Theory has implications for the type of methodology that can be used to support the research project. The literature on Activity Theory suggests that there are a number of methodological implications which must be taken into consideration. Thompson (2004), Engestrom (2001), Daniels et al., (2007), among others drew attention to the socially constructed nature of activity and the need to employ methodologies that would extract rich data from any research project that investigated any complex social landscape.

Nardi (1996, p. 95) cited the following major implications:

- i. The need to provide a lengthy research time-frame - a time frame long enough to understand users' objects and the resultant changes in objects over time and new object relations that were being developed.
- ii. The need to pay attention to the broader pattern of activity in an effort to gain the big picture of the direction and significance of an activity.

- iii. The use of a rich and varied set of data collection techniques including interviews, observations, video and historical materials.
- iv. A commitment to understanding things from the users' points of view.

The Developmental Work Research (DWR) methodology employed in this study permitted the development of an enriching and engaging environment that allowed the staff of the project office to develop and innovate as they charted the path forward for the introduction of shared services.

The first implication stated by Nardi was that it was necessary to provide an extended period to study and understand the users' objects and the changes in those objects over time. The timeline of this research enquiry indicates that the research process and Change Labs spanned one year starting with a document analysis and ending with the DWR workshops. This timeframe was sufficiently adequate to permit an exploration of the evolving changes in practice at the HEDU especially in the DWR workshops.

The second implication conveys the need to develop a 'big picture' of the direction and significance of the activity. Therefore, achieving this goal required a wide and varied collection of data as emphasised by Nardi (1996, p.95) who stated that there needed to be a *"rich set of data collection techniques including interviews, observations, video and analysis of historical material"*. The arrangement of the study also set the stage for the canvassing of multiple points of view using multiple means of data collection thus creating a rich set of data for the DWR sessions.

The third implication stated that the use of Activity Theory required the researcher to pay attention to the participants' points of views and experiences which were part of the social landscape being studied. This view was adopted given that the research was interventionist and embraced strategies that were aimed at introducing change into the social context that was being investigated. This Change was driven by the debate and dialogue of the participants

The final implication, understanding the users' (participants) viewpoint has been an important part of the study. The DWR paradigm which was employed provided the opportunity for the

participants to engage with each other in an environment that was conducive to the development of new practices based on their views and opinions, which actualised the catalyst for the development of those new practices.

### **3.7 Issues Arising From the Research Enquiry**

There are a number of issues which are vital to the execution of a reliable study. These include validity, generalisability and ethics. This section and its sub sections will address these issues given that a researcher must be able to defend his/her work based on validity and generalisability and the ethical conduct of the study.

#### **3.7.1 Validity**

In the quantitative versus the qualitative debate, the proponents of the quantitative approach often raise the question of the validity of research that is non-quantitative in nature. Validity in the context of this study refers to the credibility or dependability of the process; it speaks to specifying the link between the situation being studied and the researcher's account (Flick, 2002). The term 'validity' originates in the field of quantitative research and as such, it cannot be applied to qualitative research in the same way. However, the idea of validating research is sound.

In qualitative research, the concept of validity is also quite central. Maxwell (2002, p. 37) engaged with the subject of validity and noted the following:

...if qualitative studies cannot consistently produce valid results, then policies, programs, or predictions based on these studies cannot be relied on.

Maxwell (ibid) proposed a realist approach to validity by viewing it from a different perspective namely, from a position which considers the relationship of things the research is intended to account for rather than the procedures used to produce the account. Maxwell drew support for his view by citing Norris (1983) and Hammersley (1992).

Maxwell (2002) proposed that qualitative research can be evaluated using five types of validity namely: descriptive validity, interpretive validity, theoretical validity, generalisability and evaluative validity. Each type of validity addresses issues that surface in the quantitative versus qualitative divide.



Cohen et al, (2000) described descriptive validity as the factual accuracy of the account. In conducting research in the qualitative genre it is important that attention is paid to the accuracy of the account. This is based on the idea of truth in research and Maxwell (2002) used the concept of descriptive validity to describe this feature. He noted that the descriptions must use specificities to describe data and situations and avoid neutral descriptions like “rarely” and “a few”.

Descriptive validity is defined by Cohen et al (2000, p. 107) as:

the ability of the research to catch the meaning, interpretations, terms, intentions that situations and event i.e. data have for the participants/subjects themselves.

The interventionist research being undertaken utilised multiple means of data collection to gain an account of the activities which formed part of the Change Lab environment. This account must be interpreted accurately to reflect the story being told and must be measured against a theoretical concept for example, expansive learning. DWR’s strength is that the meanings, interpretations and intentions are drawn from the participants who verify their understanding and interpretation through the facilitation process.

In describing theoretical validity Maxwell (2002, p. 50) noted that:

it goes beyond concrete description and *interpretation* and explicitly addresses the theoretical constructions that researcher brings to or develops during the study.

He further noted that the theory can reference a physical or mental event or even be part of the researcher’s own theoretical perspective.

The concept of generalisability spans all forms of research and states that the theory which is generated based on the particular account or experiment must be applicable to similar populations and situations. Maxwell (ibid) expanded on this idea by noting that generalisability could be applied to the wider community, group or institution being studied as well as to other communities and groups which were not part of data collection process.

Evaluative validity addresses the issues of evaluating a piece of qualitative research. A piece of research must be benchmarked against a set of criteria that governs how the research should be conducted. A rigorous evaluative test is applied in this case and it evaluates what

is being researched. It must be noted, that evaluative validity is not based on and is distinct from the researcher's own evaluative procedures.

### **3.7.2 Assuring Validity**

A very important strength of the DWR approach is its ability to provide “checks and balances” with regard to the data being collected. The collection and analysis of the mirror data was the first step in the process of assuring a valid study. Once the mirror data was used and more data was generated, the analysis was done using NVIVO to code and organise the new mirror data. The presentation of the data at the next Change Lab provided the test of the accuracy of the account. The participants in the Change Lab would be able to examine the accuracy and challenge the interpretation if the need arose. The methodological construction of the Change Lab therefore provided the checks and balance to ensure that the data passed the test of validity.

The built in validity checks were also supported by a number of steps that were implemented during the process of the Development Research Work. The steps are listed as follows

- As the researcher I set high standards for the data capture.
- The Change Lab by virtue of its design records all interaction using video recording technology in addition to written notes by both the facilitator and scribe; this contributed to the accurate capturing of research data. Written transcripts were completed and returned to the participants for review and correction if necessary. This was done prior to the data analysis in order for the transcripts to accurately represent the meaning intended by the participants.
- Great care was taken to avoid words which were emotive or carried negative connotations into the change process. It must be noted however, that any perceived negative statements which emerged as a result of participant interaction were allowed given that these were part of the dialogue and pointed to areas that could be explored in more detail, with a view to bringing change to the environment.

- The qualitative nature of the study, the multiple perspectives of the participants and the aforementioned steps also aligned to provide accuracy of the account. The audio recording of the focus group, transcription by a professional and the video recording of the Change Labs provided the opportunity for the transcripts to be carefully prepared by the stenographer to minimise transcription errors. Additionally, the presentation of the transcripts to the participant provided another layer of verification to the process of ensuring the accuracy of the data.

### **3.7.3 Ethical Issues**

The issue of ethics in research is critical to the validity and acceptance of the research (Glesne and Peshkin, 1992; Creswell, 1994; Bell, 2003; Denscombe, 2007, Engel and Schutt, 2009). All project activities conducted by the HEDU project office generated discussion at the institutional level with staff expressing some misgivings about the approach to the issues of the project in the early stages and later during the introduction of shared services. The level of uncertainty and fears expressed had the potential to impact negatively on the data collection process with respect to the participation by members of staff in the study. During the collection of data, great care was taken to assuage the fears of staff members who were reluctant to take part. Permission to conduct the data collection exercise was first sought from the principals of the colleges (refer to Appendix A). Staff was also issued with a statement accompanying the questionnaire; it spoke to the confidentiality of the data collection process and assured the respondents that their privacy would be respected. The same protocol was used for the Change Labs and permission was sought to video record the sessions.

## **3.8 Conclusion**

Chapter 3 discussed the research strategy and the plan for the DWR implementation. The Chapter discussed the mirror data collection strategy and the non-traditional approach to mirror data collection as a methodological contribution. There was also discussion on the assurance of validity in the research work. It was noted that the DWR approach included a built-in validity check due to its use of the mirror data which must be validated on each occasion by the participants. The next section presents an analysis of the data from the three Change Labs providing an account of the contradictions that occurred and the resulting

change that emerged from the transformations at the conclusion of the Development Research Work. It also presents an analysis of the changes in practice that occurred in the project team.

## PART II

**Social Theory has to be useful and useable: it is not an end in itself (Archer, 1995)<sup>11</sup>**

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<sup>11</sup> **ARCHER, M. S.,1995** Realist Social Theory: the morphogenetic approach Cambridge: University Press

## CHAPTER 4 DATA ANALYSIS

### 4.1 Introduction

The previous chapter detailed the methodological position guiding the research process. It outlined the research design for a Development Work Research approach which was used to engage the participants in Change Labs sessions. As stated previously, the overarching objective was to promote change in the work practices of the HEDU project team and a resultant change in the organisation's way of engaging in work activities. This chapter analyses data collected in the Development Work Research process. It will be in the form of a narrative that chronicles the changes which occurred in the HEDU project team landscape – the focus of the study. It will address the following areas:

- (i) Determination of the objects and changes to the objects.
- (ii) Tool development during the intervention.
- (iii) Expansive learning and transformation.
- (iv) Boundary Crossing issues

Given the qualitative and interventionist nature of the study, the analysis of data must result in the presentation of the account using the participants' perspective. This section and its subsections will present the data analysis in the form of an account which describes results of the interaction of the project team in the DWR sessions consisting of three Change Labs (See Appendix G for photographs).

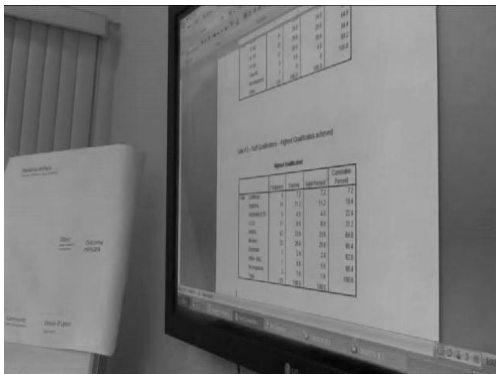


*Photo 4.1 Change Lab in session*

The presentation of the stimulus (mirror) data at the start of Change Lab 1 initiated the journey into the world of the project team. The initial mirror was comprised of an amalgam

of the data collected prior to the Change Labs. It included data collected from the project team focus group, interviews with strategic managers and a survey conducted with operational and academic staff. The participants in the data collection process were considered by the researcher as important stakeholders in the shared services implementation.

The valuable stimulus data provided a vista into the issues confronting the project team as they worked on the planning and implementation of the shared services project. In addition, the data highlighted the varied experiences of the project office planners with respect to the project, given that they had been involved with the project from its initiation, and through the shared services phases that were already completed. The stimulus data provided the “fuel” for igniting the rich debate and negotiation that would occur in the subsequent Change Lab sessions. Photos 4.1 and 4.2 show the mirror data in use.



*Photo 4.2 Statistics and AT<sup>12</sup> diagram being used as mirror data*



*Photo 4.3 Video clip being used as mirror data*

In presenting the mirror data, written transcripts as well as video clips were used to provide support to the project team as they grappled with achieving an understanding of the ‘big picture’ of the work environment painted by the ‘talk’. The strength in using the video clips in mirror data presentations was that it provided visual cues from the “body language” of the participants. This provided the opportunity to probe deeper into the participants’ intent and understanding and to address any unspoken issues that might have been critical to the discourse.

<sup>12</sup> AT is the abbreviation of Activity Theory

## 4.2. Change Lab 1 - Working with the objects

At the start of Change Lab 1, what was immediately clear was that the group was expected to function as a team while working on several activities which were in some cases unrelated. The team members however were unable to express what they were working on. Their responses were stated in their everyday language using as a reference the division of labour (roles) that was in place to ensure successful conclusion to the project office's mandate. The responses were often vague, for example one member responded by stating:

*..I am girl Friday. My **role** is that I **tie all together** [coordinate office activity<sup>13</sup>] and facilitate spending on the project.*

A summary of the staff's view of their engagement with the project is shown in Table 4.1.

*Table 4.1 Roles of project officers*

<b>Participant A</b>	Quality assurance, Merging of Library Services
<b>Participant C</b>	HR, accreditation, research
<b>Participant B</b>	All ICT issues - New Information System/ Enterprise Accounting Application (SmartStream)/Online Learning
<b>Participant D</b>	Creating School of Agriculture, Amalgamating Health Sciences, Accounting System (Training of staff)
<b>Participant E</b>	Executive officer - ties all together and facilitates spending on the projects

After discussion and intervention by the facilitator, the staff indicated that they were engaged with working on the following objects– meeting deadlines, dealing with resistance to change at the board and institutional level, and changing organisational culture. Analysis of the setting revealed a very complex environment. Figure 4.1 is a conceptual representation of the complex environment in which the Change Labs were conducted.

<sup>13</sup> Bracketed word inserted for clarity



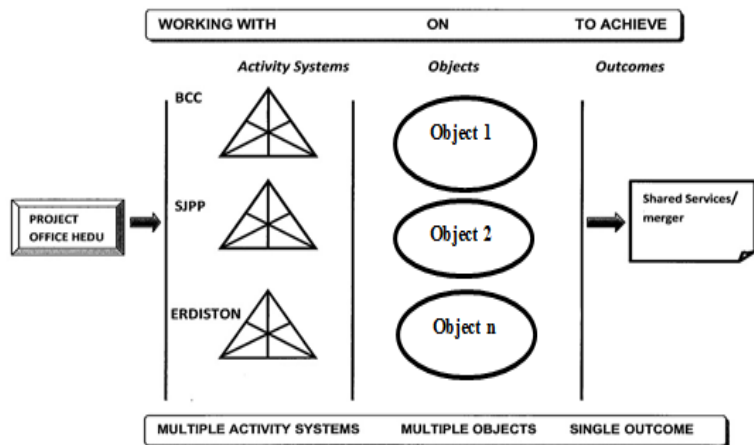


Figure 4.1 Conceptual View of the project landscape prior to change labs

The above figure indicates that the project team was engaged with a number of surrounding activity systems and working on multiple objects in an effort to complete the implementation of shared services. Over the course of the Change Labs the objects changed as the project team engaged with the facilitator with the aim of understanding their present practice and developing new and efficient practices based on their new understanding. The movement across the objects is shown in Figure 4.2. The next section of Chapter 4 discusses each object and the associated changes.

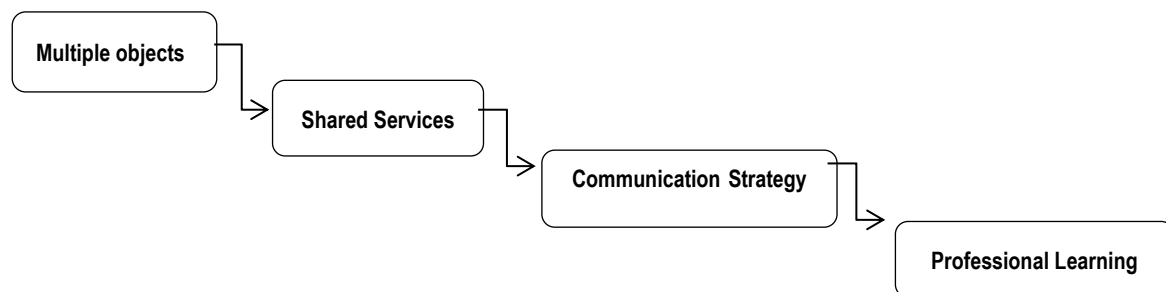


Figure 4.2 The movement of objects in the Change Labs

#### 4.2.1 Shared Services

The discussion and exchange of ideas resulted in the emergence of the shared services object. 'Shared Services' had become the mantra of the HEDU project team. Implementation was intended to be cost efficient and result in enhanced student support through the provision of online self-service modules for students. An emerging opinion was that the shared services were being made difficult by the dynamics of the institutions' environment where there was resistance to change at both the levels of the Boards of Management and the strategic leadership of the institutions. One team member in discussing the problem stated:

*There seems to be this aversion to collaborating beyond the boardroom. They would agree there but then the implementation part is difficult. ... It is like a psychological disorder; it is obsessive-compulsive behaviour.*

Another member speaking with reference to the perceived behaviour of the principles opined:

*...Because if I am a principal and I come to meetings and I get information, it is going to be [information] for the whole institution. What is preventing me from passing that information down?*

The resistance to change led to missed deadlines, delays and escalating costs. Figure 4.3 shows activity and the expected outcomes. The above-mentioned issues were just the symptoms and the Change Labs was directed to discovering the source of the challenges.

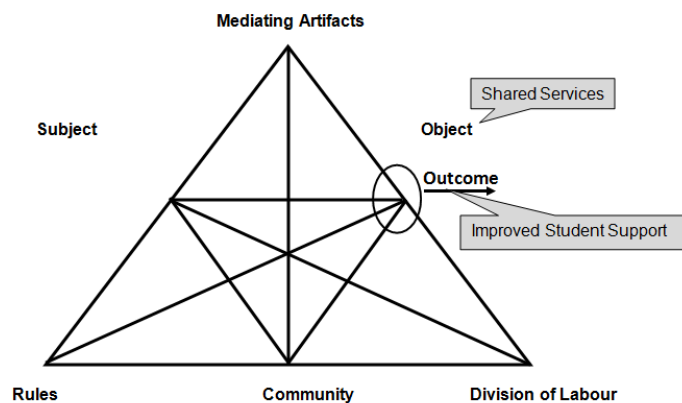


Figure 4.3 The Activity system showing the object and outcome

#### 4.2.2 Communications Strategy

The project team moved beyond exploring the shared services object to the new object of “communications strategy”. The dialogue among team members revealed that the ruptures being experienced in the execution of their duties were possibly the result of the inadequate information dissemination to all levels of the institutions’ hierarchy. The team began an exploration of defining and then designing a strategy that could be used to counter the prevailing situation which was the cause of frustration. The consensus was that a communication strategy was needed to bring commitment to the project. One member noted the necessity for a new way of communication with the following statement:

*Communication has not been our strong point*

In support of the suggestion another team member pointed out that options were available

*We are not using the web as we could.*

Figure 4.4 depicts work on the new object and the intended outcome.

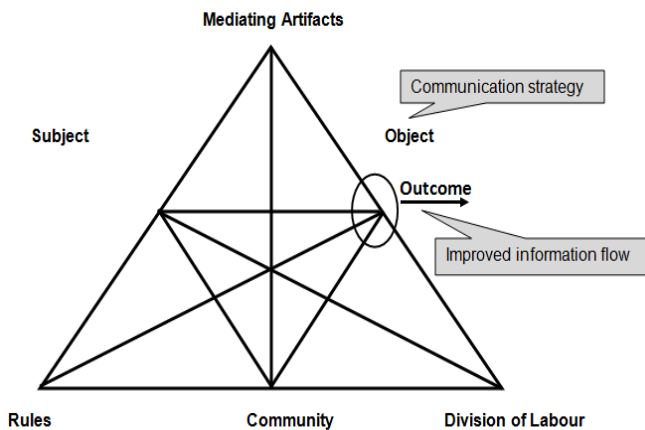


Figure 4.4 The Activity system showing the object and outcome

### 4.3 Change Lab 1 - Tool use and Development

The mirror data for this Change Lab pointed to the fact that team was working on a number of objects but lacked the tools that were needed to accomplish the task of working together to improve their practices. A number of tools were introduced to assist the team members in developing new concepts which enabled new forms of work to be developed. This section and subsections explore the use of tools in the DWR and the outcomes with respect to the learning that resulted from the discourse.

Discussion in the Change Labs brought into focus the importance of tools. In Change Lab 1 the HEDU project team recognised the need of incorporating tools as a means of working with the objects. In exploring the movement of information between the institutions and the HEDU project team, it was noted that the team was working assiduously to execute the implementation of the enhanced student support services in a timely and cost effective manner. However, the team was trying to achieve this task across three institutions using dated and inefficient means of communication. What was needed as suggested by the team was a more efficient means of engaging with the institutions in the area of information propagation.

### 4.3.1 Modelling Communication

In speaking to a lack of a communication strategy, one team member defined the problem space with respect to communication by stating:

*We need to employ a different vehicle of communication so that everyone has an option.*

The team was now focussed on working on the idea of developing a communication “vehicle”. To assist them in their effort, the facilitator introduced a diagram of the existing communication and provided the conceptual frame with which to explore development of a new tool.

The effort in this Lab had shifted from communication strategy to the modelling communication. The focus turned to determining the tool(s) that could be embraced to improve the level of communication. The members of the project team felt that developments at the institutions with respect to the improvement in the technology services provided by the institutions’ technical team meant that it was possible to move away from the bureaucratic “memoranda and letters” which were sent through the traditional channels of the postal service or the use of office messengers. It was further suggested that there could be the incorporation of Internet technologies which would permit the easy movement of information and the completion of tasks collaboratively using Internet based tools. The participants suggested the use of Microsoft Office Collaboration Tools or Google Apps. Google Apps was selected after consultation with a technical specialist. Figure 4.5 represents the introduction of the Google Apps tool into the work environment.

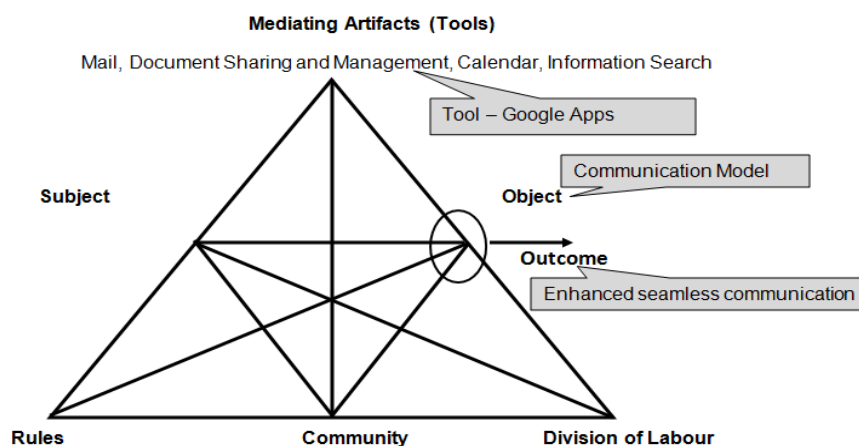


Figure 4.5 The introduction of a new tool

The engagement in the Change lab and the introduction of Google Apps resulted in the improvement of the internal communication as well as communication within and across the stakeholder institutions. The next section explores the developments that occurred in the second Change Lab.

#### 4.4 Change Lab 2-Tool use and Development

The analysis of the interaction in the first Change Labs shows the object was shifting and becoming more of a tool. In addition a contradiction occurred between the old way of communication and the new way. The team felt that it would be a difficult task to implement the model in an environment in which there was a well-established (though inefficient) mode of communication between the Ministry of Education's unit and the neighbouring activity systems. The new mirror data presented confirmed this contradiction. During Change Lab 2 the team posited the idea that if communication was to be effective it would have to be embraced by the stakeholder community. What was needed in the situation was a champion (advocate) of the communication initiative that was about to be introduced in the institutions. The new object was 'Finding the communications advocate(s). Figure 4.6 shows the new object and the associated tool.

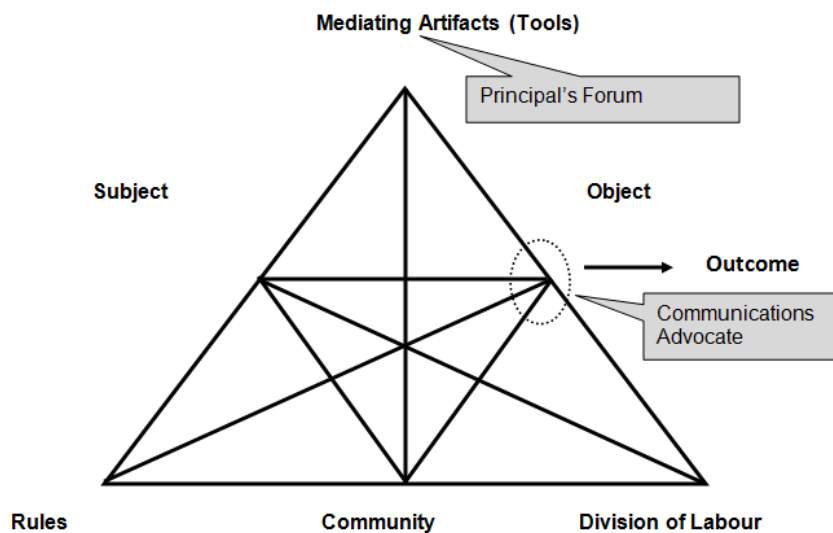


Figure 4.6 Working on finding a communications advocate

A team member recalled the mirror statement from the previous session relating to the importance of the principals of the institutions to the buy-in process. The view that was held by most members after negotiation and debate was that an enhanced communication strategy

would contribute to “buy-in” from the stakeholders who were reluctant to become engaged with the project in a meaningful way. The team concluded that the communication strategy that they would develop would be useful in overcoming the resistance to change. The idea of the need for buy-in is captured in the statements of two participants.

Participant B:

*It's about communication but it is also about **buy-in** because people get an opportunity to feel that are participating in the process and that they **have a contribution** to make and that it is being taken into consideration.*

Participant A: noted

*Some of our challenges happen at the top (level of management). We've 'got' to get them to **buy in** totally.*

Participant B: responded by voicing the following opinion:

*That's a challenge. Our issue is that we walk a fine line. We are supposed to implement these shared services but at the end of the day... there needs to be a line drawn in the sand as to where our responsibility stops and where the **responsibility of the heads** (principals of the institutions) begins.*

The previously stated comments suggested that there were challenges in the existing relationship between the project team and the heads of the institutions. The process of dialogue and discussion also revealed that the team felt that the issues related to buy-in, and collaboration were not only the result of very bureaucratic rules that had their basis in post-colonial civil service practice but could perhaps be attributed in some measure to the roles being played by the principals. The team was aware that the issues of buy-in could be attributed to the crossing of boundaries. One participant made the following observation:

*My concern is that we have to be very careful about what we use - of not overstepping our boundaries ... institutions are still autonomous and run by their principals and we want to communicate with everybody. ....Whose role is that? I think we need to determine whose role and responsibilities it is and make sure that we are not stepping on anyone's toes, which then negates anything we have done beforehand.*

A second participant in agreeing that boundaries were being crossed addressed the issue in the following way:

*If I have to move my boundaries so that I could share with another institution, it is a little difficult to do and it makes me look too vulnerable apparently.*

Boundary crossing and the associated were discussed in the works of Engestrom (2001) and Daniels et al (2007a, 2007b) as important aspect of working across multiple activity system. Given the time confines of the Change Labs, the facilitator focused the team on working with the principals of the institutions on achieving buy-in as a means of overcoming the boundary crossing issues. This can be viewed as limiting and will be discussed further in the limitation section of the next chapter.

It was felt that the principals' roles and their relationship with HEDU needed to be enhanced. Emerging out of the dialogue was the idea of a "*principals' forum*". This forum was designed as a monthly (sometime bi-monthly) meeting of the Director of HEDU, the project team and the principals. In the forum, the principals would be updated on the major initiatives. They would be allowed to critique the approaches being taken and would offer alternatives they felt could work more efficiently given their intimate knowledge of their institutional cultures and landscapes. In addition, the principals would be given the opportunity to offer new suggestions in relation to the shared services without being made to feel that they were crossing forbidden boundaries in relation the HEDU project office's operations. In support of the initiative to create the forum one participant posited the view that:

*....the regular principals' meeting creates a forum that wasn't there before.*

Another participant noted:

*Having the principals here [at the HEDU office] looking at all the issues related to student services is the right step.*

In essence the principals were being allowed to buy into and take ownership of some of the activities of the project office and become champions at the board and operational levels of their institutions. Thus, the principals would always be aware of the project status and be privy to all communications on major initiatives before they were officially sent from the project office. Figure 4.7 shows the new model of communication that emerged as a result of the discussion. The initial testing of the model and the introduction was very well received by the principals who felt that they were now an integral part of the planning process with the ability to "sell" the ideas and initiatives to their staffs.

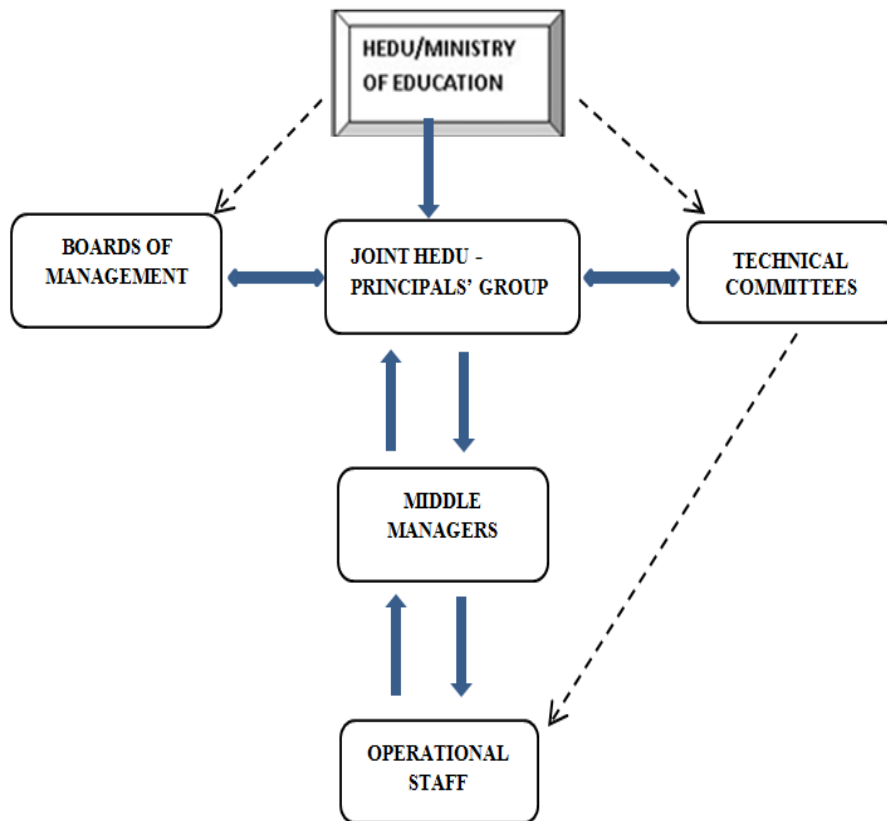


Figure 4.7 The model of communication developed in Change Labs

The dotted lines in Figure 4.7 indicate an attempt to remove a layer of bureaucracy from the new model. In most cases the official procedure required a lot of paperwork and was time consuming. The line of communication between some elements is not solid because at some points there needed to be direct communication between HEDU, the technical committee and the end users especially when shared services were being implemented and there was a requirement for rapid feedback to the information technology team. Note that the dotted lines indicate two-way communication which effectively speeded up the information flow.

#### 4.5 Change Lab 3 - Consolidation: Working towards the future

The mirror data that emerged from the second Change Lab indicated that the new form of communication was in early stages of its operation; this was now the new way to communicate. There was the realisation that for the model to work there would have to be the acceptance of the more efficient way of communication. It was felt that the **principals' forum** could be used to provide buy-in to the institutional use of the new mode of communication. Not only would the communication be at the cutting edge within the institutions but it would permit the easy and manageable flow of information across the



institutional boundaries; this initiative would be driven from the “inside” given the principals’ new role. They would be able to oversee a new communication strategy which provided an integrated web-based modality of communication that incorporated people (user groups), email, calendars, document sharing, intranets and the overall management of data through the deployment of information communication technology.

The last segment of the Change Lab was spent reflecting on the change experienced in the team’s practice as well as looking forward to the future with respect to the further enhancement of practices at the project office. It was proffered that there was the need to explore team work in depth in an effort to improve the organisational efficiency by engaging with new rules and tools that would significantly enhance the work in the project office. At the end of the session the team’s hope was that future work would permit an engagement with team work resulting in a more efficient and effective organisation at both the project office and institutional levels.

#### **4.6 Transformation and Learning**

In Chapter 2, reference was made to Engestrom’s assertion that tensions and contradictions resulted in change and the acquisition of new learning. The preceding discourse describes the trajectory followed by the staff during the Change Labs. The data indicated the occurrence of transformation over the course of the Change Labs. The previously discussed contradictions and tensions created the environment that engendered transformations in the tool - object relationships.

When the participants commenced their engagement in the Development Work Research initiative, they were presented with manifestations of a number of contradictions which in their everyday language were problems or ruptures that they were encountering as they executed their stipulated tasks with a view to achieving the outcomes that were the goals of the shared services project. As the Change Labs progressed it emerged that the project team was in effect working on a number of objects which in some instances were unclear. Their work practice was also tightly circumscribed by the bureaucratic manner of operating as members of the Civil Service in a post-colonial independent Caribbean country. Over time the team progressed from working within their constraints to taking control over their practices which were historically influenced. They were able after the dialogue and debate of

the Change Labs to begin the process of working with the object(s) of their activity and develop new tools to assist with the process of change and development.

The process began with the condensing (reducing) of the multiple objects to a smaller number of objects that could be used to help them in reaching a scientific understanding of their past and present practice and develop new work practices based on that new understanding. The facilitator assisted the team by providing the tools to assist them in negotiating the difficulties in their existing work environment.

Three important results emerged during the intervention process. First was the introduction of Google Apps to enhance and consolidate communication within the HEDU office and across the neighbouring activity systems located in the stakeholder institutions. Second was the principals' forum which was crafted as a means of combating the challenge of achieving additional buy-in from the participating colleges.

The third outcome was the team's increase in confidence in tackling the task of ensuring that the shared services would be implemented speedily and the enhanced student support services would become an integral part of the student service delivery by the colleges. This change in approach speaks to the development of professional character. The transformation that occurred in the DWR study is shown in Figure 4.8.

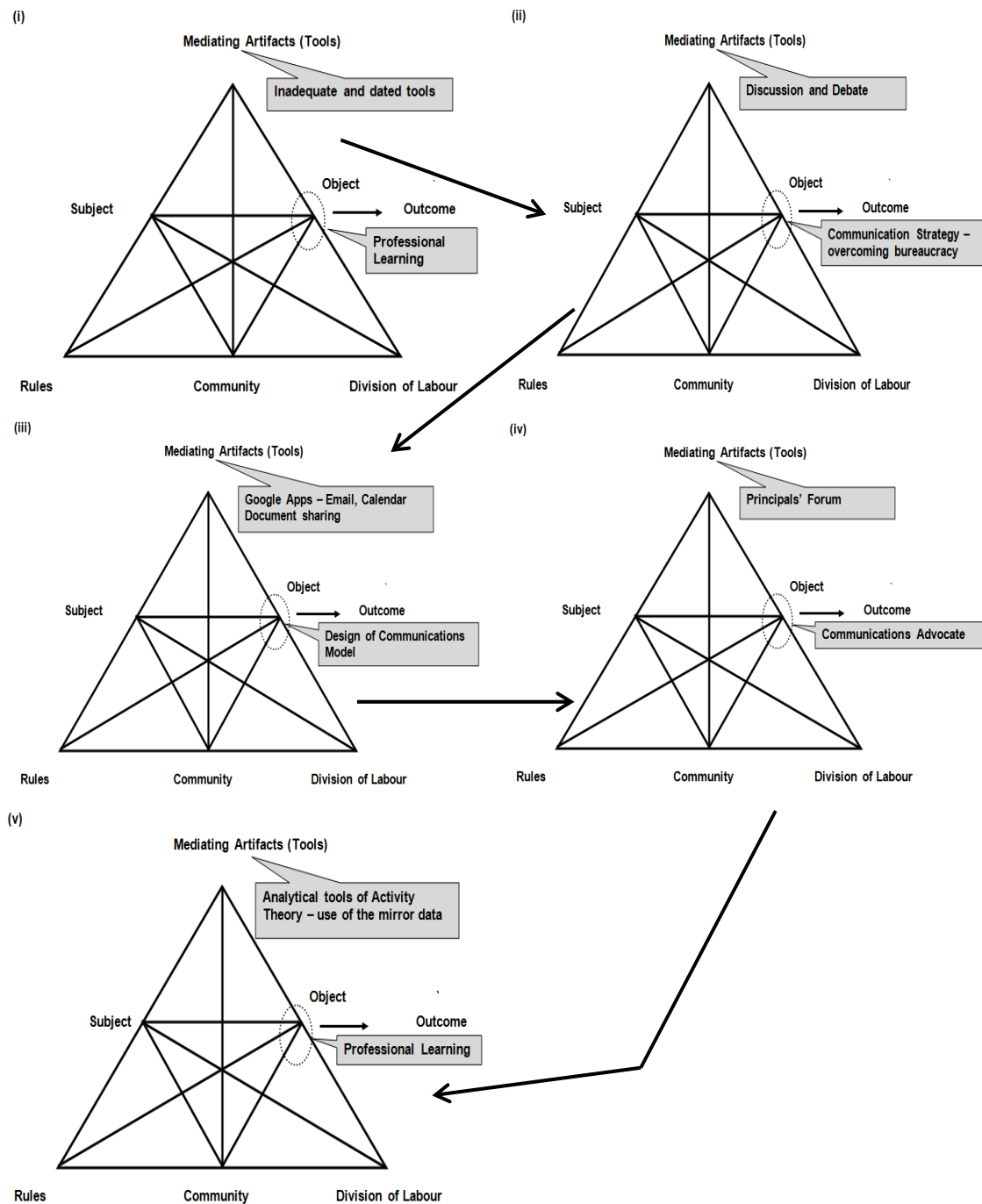


Figure 4.8 Transformation paths in the Change Labs

In Chapter 2 there was discussion on the nature of learning that would occur in the DWR context. It was noted that the learning did not conform to the traditional form of “vertical

mastery” (Daniels et al, 2007) but instead was grounded in the creation of new knowledge through the creation of new activity. The learning moved from idea or concept through a series of refinements to the implementation stage where the learning was transformed into a practice. Similarly, in the DWR sessions the team moved from the understanding of the present practice which was constrained by historical practice to one in which they applied the analytical tools of Activity Theory to develop new forms of practice which were applied to their work environment as a means of overcoming the obstacle that were a product of the old forms of practice. The team according to the concepts of Engestrom (2001) was exposed to a methodology that forced them to question their practice and diverge from the established norms. The members of the team were guided into a situation that escalated into a “*collaborative envisioning and a deliberate collective change effort*” (Engestrom 2001, p. 137).

The process of change was not always smooth; there were perturbations along the way. When I examined the project office staff they did not sense that their approach to practice might have been contributing to some of the problems being experienced in the execution of their duties. The general feeling was “we have a job to do; we have the mandate from government so we will proceed”. The initial stages of the presentation of the mirror data resulted in a situation where the officers felt that there was a need to change their approach to the project. This view continued at each stage of the DWR but with at least one person offering some level of resistance to the change at each stage. During a session one member initially resisted the model being developed because her opinion was:

*“institutions do not want the services so what’s the use”?*

This form of internal team resistance was overcome through the collaborative effort that was discussed above.

What the project team experienced was an expansive transformation by reframing the object and the object’s motive which resulted in them being able to visualise wider possibilities in relation to the movement from the old form of practice to the new and improved version.

#### **4.7 Conclusion**

This chapter discussed the trajectory of a DWR study with the project team of the Higher Educational Development Unit in Barbados. The data which was collected as part the research study was presented and discussed. It reviewed the three Change Labs which were

conducted and analysed the emergent data that pointed to the changes that were occurring in the work environment of the project. The data indicated that there were indeed complex sociocultural relationships that were occupying the attention of the staff of the project team in an environment that was constrained by historical Civil Service praxis.

The members of the project team some of whom had worked in the local private sector, or in other countries, demonstrated a measure of internal conflict given that they had become accustomed to working on the cutting edge with practices that were intended to provide competitive advantage. They questioned the efficacy of their efforts in the difficult landscape in which they were currently operating.

The chapter described how the DWR approach was used assist the staff in working through their contradictions, learning from the process and developing new solutions and practices which contributed towards improving their working environment. The outcome was a modified work environment in which a concentrated group effort resulted in a renewed thrust to complete the project obligations. The findings will receive further deliberation in Chapter 5.

## CHAPTER 5 DISCUSSION OF THE RESULTS AND REFLECTIONS

### 5.1 Introduction

The previous chapters described a research project which was conducted with a small project team from the Higher Education Development Unit. Using Activity Theory as the underpinning theoretical framework, I employed Development Work Research and the Engestromian Change Labs to reveal the tensions and contradictions that occurred in the project team's work environment. The intent was to reframe their understanding of the work practices from the everyday to the scientific, and develop new work practices to generate organisational change. The study also investigated the expansive transformation that took place during the intervention process.

### 5.2 Findings of the study

This section examines the results of the study reached through the analysis of the Change Lab data and re-engages with the literature to compare the outcome with the assertions made in the literature with respect to the outcome of the DWR pursuit. The main question of the study was:

***In what ways, if any, did changes in the work practices of a project planning group contribute to changes in the planning and implementation of shared services in three Barbadian educational institutions after engagement with a Development Work Research intervention?***

As depicted in the analysis in Chapter 4 the application of DWR intervention and Change Labs led to a change of practice in the project team. The remodelling of the communication protocol to remove the layer of bureaucracy that existed was evidence of that change. As a result, the practice of the team moved from the old way of communication (bureaucratic and paper based) to the use of Internet Technologies. The changes in practice indicated a movement from concept to implementation with the creation and implementation of the principals' forum as a means of overcoming the challenges of working across the surrounding Activity Systems. An indirect benefit to accrue from the adoption of the principals' forum was the principals' request to engage with an IT forum comprising of the IT manager of HEDU and the IT personnel of the stakeholder colleges.

The above listed results indicate that the process of intervention produced change given the project team's new way of working. The DWR process used to achieve the results was based on the Vygotskian dialectic, of internalisation and externalisation that supported the interventionist process (Engestrom et al, 1999; Bellamy, 1996, Kaptelinin, 1996). The reinvented practices effectively created an environment that permitted the shared services initiative to continue in a less turbulent environment.

Evidence of the afore-listed change was seen in the principals' recommendation for the inclusion of the ICT teams at the institutions to promote the use of the Google apps. Thus, the organisations began to move towards a technological cutting edge by using collaborative communication tools. This was a step forward in the organisations' way of conducting business. This new way of operating meant that the project team and the organisations were on the 'same page' as far as communication was concerned. The principals' forum also resulted in collaboration at the strategic level among the colleges. This in effect made it easier to work in a shared services environment with the support emanating from the strategic managers of the institutions.

Contradictions provided the momentum of development and change (Engestrom, 2001; Virkkunen and Kuutti, 2000). When an activity system develops, change will result from the contradictions that occur when the rules of those systems become unclear, a new set of tools are presented into the existing context, or external factors encroach on an activity.

Contradictions as such move activity systems away from a particular direction on to a new path as adjustments are made by the subject to the environment. The contradictions that surfaced in the DWR and Change Labs provided the opportunity to analyse the problems and engage in the DWR sessions to develop a solution to the problem and chart a new path with respect to work practices. The transformations that occurred in the team are captured in results of Q1.

**Q1. What were the changes in work practices that occurred in the planning group after engagement with Development Work research?**

The ensuing paragraphs provide the answers, which emerged during in the DWR and Change Lab intervention. With respect their function in the project landscape, there was the assumption by the project team that as representatives of the Ministry of education their work

would be easily accepted; this was against the background of one autonomous and two semi-autonomous institutions where staff was concerned with executing their institution's mandate which was viewed as more important.

The project team also expected that communication in a bureaucratic environment would have achieved the desired results but the communication was not reaching the operational staff in a timely manner or in some instances not reaching the staff at all. Therefore, there was the need for a simple and effective means of information dissemination against the backdrop of bureaucratic practices in the government and its institutions. What was also evident was that the project team was working on implementing changes in the project landscape but were encountering resistance to change by the stakeholders.

The results of the previously discussed Change Labs provided the opportunity for the framing and reframing of the issues that allowed the team members to engage with the analysis of the work environment. The mirror surface provided the perfect tool to engage with past practices as a means of understanding their current practices and developing future practices through innovation. The staff was therefore able move to the stage on innovating and creating new work practices. The impact of the historical practices is captured in the results of Q2.

**Q2. What were the tensions and contradictions experienced by the planning team and in what ways, if any, did professional historical practices contribute to the contradictions?**

An examination of the historical practices revealed that the members of the project office team were unsure of how to engage with the problems brought about by working in a bureaucratic environment, using work practices that had their origins in a civil service in which such practices had not evolved to meet the challenges of the modern work environment. It was noteworthy that the project team sought leadership in relation to solving the problems of the work environment and did not perceive themselves as leaders. This was a result of the embedded historical practice. Workers were expected to operate within tightly circumscribed confines without the use of resourcefulness that could foster workplace improvement.

The project officers experienced tensions and contradictions brought about by the frequent changes of leadership of the project at the ministerial level. The shifts often resulted in long



periods without policy input from the new ministers. This meant that the project team often operated in a “vacuum”. Another issue was the behaviour of the Ministry of Education with respect to project outcomes. The project team was expected to produce results despite the rapidly shifting project environment and an uncertain HEDU work environment caused by the Ministry’s actions.

The chief objective of the research exercise with the HEDU project team was to use DWR and Change Labs to foster changes in the way the team and the project unit carried out their work in the rapidly fluctuating environment. The results of engaging with the contradictions (Q3) that surfaced in the intervention indicate a concurrence with what was discussed in Chapter 2. There was a convergence of object oriented analysis, multivoicedness, historicity, contradictions as sources of change and development, and expansive cycles of transformations in the HEDU activity system. Q3 lists the transformations that occurred.

**Q3. How did the contradictions contribute to the transformation of the planning team and result in expansive learning in the project planning environment?**

As noted by Engestrom, (2001), Issroff and Scanlon (2002) and Kuutti (1996) contradictions are the basis for change. By investigating their past and present work practices and revealing the contradictions, the project team began to innovate and developed a model of communication that enhanced the way they were able interact with the principals of the institutions and communicate more easily with the operational staff of the institutions in the execution of project phases.

Furthermore, the project team sought solutions to the issues involving their own work practices without reference to leadership. They took ownership of their work based on a new scientific understanding of their new practice. Consequently, they presented the leader of HEDU with a new work practice that had the potential to change the HEDU way of doing business with the institutions. This new practice was accepted and became the “new norm” of operating.

The project team collaborated during the DWR sessions and developed a model of communication for the future engagements with the institutions. Accordingly, the group was able to move from a diffuse model of communication to a model that improved the dissemination of project information to all relevant stakeholders.

The project team's engagement in the Change Labs also resulted in a greater awareness of boundary crossing issues. This awareness was a contributing feature in the communication model which sought to cross the boundaries in a manner that permitted the operational staff of the institutions to play a more integral part in contributing to the work of the project through the inputs that were made via the improved communications channels.

The results listed in the preceding paragraphs were achieved by team participation in development sessions; the team worked with the problem space at which the activities were directed and which was ultimately fashioned and transformed into new outcomes, using the conceptual and analytical tools of Activity Theory (Hiruma and Yamazumi, 2007).

### **5.3 The Strengths of the Study**

As the researcher on the study, I must critically analyse and reflect on my work. I shall do so by examining the strengths of the study in this section and balancing the assessment by exploring the weaknesses of the study in the following section. A major strength of the project is that it was conducted in a culturally unique social landscape adding to a body of work that exists on the use of DWR to facilitate change in the organisation. It occurred in a post-colonial independent Caribbean country in which vestiges of the pre-independence Civil Service bureaucracy impacted on the work of Government funded institutions and teams.

The study adds to the growing body of work being done the United Kingdom (UK) and Finland where more mature government structures and practices exist. This study therefore presents an original contribution by adding a view of using DWR in a non-European landscape where the government structures in relation to work practices were not as well developed.

An additional strength of the study was the design of the mirror data collection process. As stated in Chapter 3, the traditional implementation of the Engestromian Change Lab relies on the collection of data using mainly interview and observation. However this study engaged in a different way with the collection of mirror data by including a focus group with the project team prior the commencement of the intervention. Other sources of data were

structured interviews and a survey. This approach was a methodological contribution which provided a more focussed set of data at the start of the intervention.

The study's reliance on the literature to provide the underpinning theoretical and methodological bases to support the study is a further strength. In addition, the study made use of research literature that informs the current thinking on activity theory while creating in the researcher/facilitator of this study, a theoretical understanding of Activity Theory that was based on the seminal work of Vygotsky. The contemporary works of Engestrom, Kuutti, Virkkunen, and Daniels et al among others were reviewed and used to support Activity Theory and Development Work Research to ensure the nexus among the theory, research questions and the methodology.

Systems thinking and communities of practice were approaches that I considered as suitable for studying organisational change. Their strengths and weaknesses were assessed and their suitability as the underpinning theoretical framework was examined but the literature revealed areas of weaknesses that affected their suitability for adoption in the complex sociocultural context in which this study was occurring. Activity Theory proved to be the most suitable framework.

A final strength of the study is that it produced results which were of benefit to both the project office and to the stakeholder institutions. The new communication protocol and model were put in place and the new principals' forum started work. At the time of writing up the study the principals had worked with the Director of HEDU to plan and facilitate an international conference which provided benefits to all stakeholders. The project team was also part of the planning and execution with the principal of one institution taking the lead and the other principals providing support for the conference initiative.

A spin-off from the principals' forum was their recommendation for a technology forum comprised of the Information Technology managers of the HEDU and the three institutions. Its remit was to provide technical advice to the joint HEDU/Principals' forum body with a view to removing bottleneck going forward and enhancing technical collaboration among all the groups that were involved in the shared services initiative. This could be viewed as an indirect benefit where the work practices of the associated activity systems were being adjusted as a result of changes in the work practice of the HEDU project team.

## 5.4 Limitations of the Study

The previous section discussed the strengths of the study. This section will reflect on and explore the deficiencies of the study in an effort to bring balance to the discussion. In the first instance, a limiting factor of this study is its length. As stated in the literature review, the research time should be sufficiently long to study exhaustively the environment which is being investigated. The study presented challenges in maintaining focus because of its depth and breadth which provided the avenue for exploring many more areas than were covered in the literature review and which could be relevant to the study. For example, in Chapter 3, I mentioned the boundary-crossing issues that emerged but I was unable to explore these issues in more detail.

The existence of three unique institutions with long histories, different strategic paths and well entrenched cultures indicated the existence of strong boundaries. The staff also held particular views of themselves and where their institution stood in the pecking order of the Barbadian educational landscape. On reflection I am of the opinion that further investigation into boundary crossing would have yielded additional data in relation to additional practices that could be developed to assist with the crossing of the institutional boundaries.

Another constraint in the study was my inexperience as a DWR researcher. By design DWR requires a number of researchers to manage the DWR experience. In addition, the researchers must be fluent in converting from the everyday to the scientific intuitively. My experience in the area of DWR placed a burden on my ability to perform as efficiently as I would have wanted to. I was not sufficiently fluent with theory and it was sometimes difficult to make the connection between the everyday and the scientific and quickly reframe what was said 'on the fly'. This was a challenging experience.

The study was also constrained by time. The one and a half hours consented to by the Director and team was short of the usual two hours per session in the traditional Engestromian model. DWR is quite time consuming and I wanted to engage the participants in at least two additional iterations. However, the exigencies of my professional responsibilities at the Samuel Jackman Prescod Polytechnic and the time constraints of the HEDU project team only permitted three change labs but on retrospection I have determined that it would have been more productive from a research perspective to have engaged with

the participants in at least three additional DWR sessions to determine if the new practices had matured. Then I could have worked with staff on deeper enhancement of the models.

Fourth I detected a weakness in the way I worked with the Principals of the three colleges. I used structured interviews, gathered data about their perceptions of their work landscape, their historical experiences as well as their views on the sociocultural issues of which they were aware with respect to the work of the project team. What I could have done differently was to bring them together in a DWR setting and provide them with the mirror. This certainly would have produce even richer and more meaningful data since I could have explored the contradictions found in the DWR data with those institutional leaders.

One question that I have pondered has been the connection between the main question and the methodology that was employed to answer that question. On reflection I have noted that although the methodology sufficed, issues that were not “on the radar” at the start of the study emerged as the study progressed. In addition to the previously stated limitations, other factors affected the efficacy and scope of this study. The major ones were scheduling, Change Lab attendance, time management and logistical issues.

In the first instance scheduling of meetings in the very dynamic environment involving multiples persons across three institutions affected the timeline of the project. In some instances, at least one person was missing because of scheduling conflicts or illness. To mitigate the effect of the missing persons, the facilitator presented those persons with a report of the meeting and solicited comments on the issues raised in the report.

Another important issue would have been my position as a staff member of one of the colleges involved in the shared services project. I have been an employee of the Samuel Jackman Prescod Polytechnic throughout the execution of the research project. It is therefore logical to assume that the occurrences in the project landscape would have had some psychological impact on me as a researcher. I have therefore made a great effort to retain objectivity in my interactions with all participants throughout the duration of the project.

Inconsistency in attendance at the Change Lab was another issue with which I had to contend. The change labs did not have a consistent number of persons throughout the sessions. At least one person did not complete the full session and had to leave before the completion. In

one change lab, one participant missed the session because of the passing of a loved one. These individuals would have been brought up to date and would have had the benefit of the mirror data in subsequent sessions.

The old adage that “time was of the essence” held true and the logistics of conducting the type of intervention chosen for the project was challenging. DWR and Change Lab interventions are very time consuming thus making it difficult to bring very busy persons together. I also discovered that it was quite an expensive process given that transcription costs in Barbados are high. A lesson learned in the process was that the management of the DWR for a single person is particularly difficult.

## **5.5 Discussion of the Results**

This study occurred in a cultural landscape where the government’s way of operating affected the project negatively due to regular changes at the ministerial leadership at political and policy levels. The change lab intervention provided a conduit for the project office staff to take ownership of their work, tackle their tensions and contradictions and develop a new way of engaging in communication across the landscape of three institutions. Moreover, the intervention created an atmosphere that fostered professional growth and learning.

The results of the study provide an insight into a specific case occurring in a given cultural context and cannot be generalised to the population of shared services implementation occurring elsewhere. However, it must be noted the results bear similarities to what has been described in other studies especially those involving interaction across multiple organisations as reviewed in the works Daniels et al (2007a, 2007b).

The main research question was framed to capture the Vygotskian dialect of internalisation and externalisation that underpins Development Work Research and the Change Labs. The supporting questions also centred on investigating the result of applying the DWR and Change Labs to provide benefits to the project team through a scientific examination of their environment and work practices and the development of new and enhanced practice.

The results listed in section 5.2 permit the following observations to be made in the Barbadian context of the study. First the Barbados government still exerts a level of control and bureaucracy in its relationship with its departments and units. The ‘one size fits all’

policy with respect to operational areas like communications, can lead to stagnation in work practices without any attempt at innovation.

Second the results indicated that there is what can be termed as “spin-offs” from DWR work and Change Lab interventions. The idea behind the notion of “spin off” is that some additional and indirect changes can occur in surrounding activity systems as the result of the innovation of the Change Lab. A case in point is the inclusion of the Information Communications Technology (ITC) managers as an ICT forum to advise the principals’ forum. This emerged out of the principals’ forum which was an innovation arising out of the Change Labs.

Third the results indicate that the learning which occurred in the DWR and Change Lab sessions moved horizontally from the project team across the boundaries to affect the principals’ in a positive way so that they changed the manner in which they interacted with the project team and by extension their staff.

## **5.6 The Implications of the Study**

Planners of collaborative ventures like the introduction of shared services must engage in strategic planning, harness the correct tools especially in the area of communication and visioning and unambiguously express that vision. The potential challenges must be made clear and the appropriate implementation strategies employed. Moreover, the planners should investigate the landscapes with which they will engage, carefully noting boundaries and areas of potential resistance. Armed with this knowledge the planners would be in a better position to work on the main objects which would permit them to negotiate the difficult sociocultural terrain and work towards a successful achievement of the project goals.

Furthermore, there must be steady efforts at the mitigation of threatening situations, by careful study of the social landscape and constant evaluation and re-evaluation. In addition, change management strategies and developmental activities should be actualised to provide the nurturing environment that permits stakeholder support of the collaborative programme.

A broader issue which arose was the role of policy development and the implications of introducing new policy. At the implementation stage of the shared services agenda, there

were potentially disruptive sociocultural issues like resistance to change and the lack of buy-in which surfaced. The project office team struggled with those issues given that their work practices were inadequate to cope with the challenges that were being experienced. Planners of major policy initiatives that are geared towards a social population must be cognisant of the social implication of such policies and should engage in preliminary fact-finding and research to guide the development of new policies. Often as was the case in Barbados, new policies were enforced based on political necessities and not on the results of research.

Hammersley (2002) recognised the nexus between policy and practice but indicates the difficulty that the relationship engenders based on the different expectations of policy makers and practitioners. When a new policy affects the way of “doing work” a very conflicted work environment is likely to develop.

Organisations often overlook the value of the people and the work practice they develop and utilise to achieve the organisation’s goals. Over time due to ruptures and changes in the organisational culture and praxis, the work practices are often in need to refinement or reinvention to meet the new challenges that arise from using practices developed in the past and that have become problematic in the present environment.

## **5.7 Recommendation**

The document analysis revealed that at the policy level, no mention was made of the human issues of engaging in collaborative exercise or the impact on work practices at either the institutional or planning office level. It is therefore recommended that the following steps be carried out prior to the commencement of any further collaborative activity in the HEDU/Ministry of Education Barbados context.

- i. Potential sociocultural issues are identified and prioritised; the potential for disruption is identified and mitigation strategies are devised.
- ii. Work practices are examined to ensure their suitability for use with any new initiative.
- iii. Change management activities must not be ad hoc but must be sustained and targeted at the right personnel in order remove potential areas of conflict. ***I recommend the Change Lab as a major means of addressing some of the***



*“change issues” and DWR as the means of identifying the shortcoming in practice and working to develop new practices.*

- iv. Care must be taken to ensure that there is a nexus between the expectations of project planners and understanding the implications of any project being introduced across multiple institutions.
- v. There must be an attempt to develop strong lines of communication between the strategic and operational levels as highlighted in Figure 4.6 and all parties that are sharing in the project activities.

### **5.8 Implications for further Research**

Given that a piece of research represents a moment in time on a long journey, there is more work to be done in the landscape that was investigated in this study. There is the opportunity to move on to the next step by working with the relevant stakeholders to develop a more sophisticated activity theory driven model of the processes that are in place particularly in the wider macro level given the inconsistency of government’s initiative. There are layers of other activity systems that needed to be incorporated into the wider model for additional investigation. The thesis as it stands does not demonstrate that situation in a sophisticated way.

### **5.9 Final Reflections**

Reflecting on one’s work is a basis for personal and professional improvement (Somekh, 1993) and I have debated with myself on the lessons that I have learned during the research exercise. At the commencement of this dissertation, I described a personal and professional journey that unfolded as I studied the sociocultural landscape, which was brought about by the project. When I embarked on this project, it was with a very idealistic view of qualitative research and the pathway that would have to be traversed in order to achieve an outcome.

Developing the ability to reflect on the on-going work was an invaluable personal and professional change that I experienced during the course of the study. At points during the data collection phase, I paused to reflect on what was going well and what was not and determined the best approach to move the project forward. Of special significance was the development of a greater appreciation for integral relationship among the research question,

the underpinning theoretical framework and the methodology that was used to find the answers to the research question.

The biggest lessons learned from the study occurred during Change Labs where I carried out the dual roles of learner and facilitator. Over the course of three labs I learned the intricacies of navigating in an environment in which I sometimes crossed the boundaries of the participants to get an understanding of what objects they were working in order to enhance and expand those objects. As well, I encountered first-hand the difficulties in conducting a DWR as the sole researchers and facilitator. Additionally, I began a journey into becoming more fluent with theory in order to make the connection between the everyday and the scientific and extemporaneously reframe it. It was a challenging exercise.

The journey through the study was filled with twists and turns; surprises unfolded as the political exigencies affected the landscape of the project office. For me as the researcher there was also the professional change and development which assisted the team in moving from the everyday to the scientific understanding of their work practices. As part of the research supervision process, my supervisor often “threw the curve ball” (to use a baseball metaphor) which created the double bind situation and permitted me to reach new personal and professional outcomes in relation to the use of the Activity Theory, DWR and Change Labs.

In summary, the research project cemented in my mind the very strong relation between theory and practice. I have also been made acutely aware that research environment may be subject to very strong external influences which can often change the focus of a research project. Such was the case with this study where the regular change in the office of Education Minister over the life of the project, a change in government and subsequent changes in policy resulted in a shift of focus in the research.

Viewing the project through the eyes of an EdD student, the theoretical aspect of the study and research enquiry have resulted in focus on the interaction and relationship between advanced professional issues and academic enquiry. Professional development has been the hallmark of my experience throughout this research project.

### 5.9.1 Important questions I considered

I wish at this point of my reflection to engage with a number of questions that examine my own approach to the conceptualisation and implementation of this study.

The first question is as follows:

***Was my formulation of the research questions suitable?***

In answering this question, I reverted to thinking about the underpinning Vygotskian theory from which this study drew support. This is a strong and popular theory in western thought that highlights and theorises the social nature of activity and learning. I also reflected on the work of Nardi, Engestrom and Kuutti among others to bring a contemporary approach to my exploration of Activity Theory. The works of these modern-day scholars in conjunction with the work of Vygotsky spawned an approach which resulted in a personal and professional engagement with the issues that were present in the HEDU landscape. The research questions were the result of synthesis of the various approaches to studying Activity Theory in context. The formulation of the questions therefore was an attempted to research an area of diversity that would present very rich and varied data.

The next question on which I deliberated was on whether my adoption of CHAT was prudent. CHAT by its very nature speaks to the exploration of the social implications of studying activity in context. The application of CHAT to the study of a Higher Education project team in the Barbadian/Caribbean context adds value to the body of work on shared services by applying the theory in a new geo-political context.

Data collection was a very critical component of this study and the third question that engaged my attention is stated as follows:

***Was the data collected during the study robust and rich enough to permit me as the researcher to answer the research question?***

The change Labs produced ample and relevant data which was used by the facilitator to work with the participants through their tensions and contradictions and bring about personal change. Interventionist approaches to research will produce voluminous amounts of data and in this case the data was enhanced with supporting data from multiple sources.

The final question on which I contemplated sought to answer the following question:

***Was my approach to analysis and the formulation of the results valid and reliable?***

In Chapter 3, I explored issues that were likely to affect the reliability and validity of the study and the measures that would be needed to mitigate any negative effects on these very critical elements. Given the qualitative perspective of this study, the key issues that were in focus were accuracy of the research account, sound data capture, acknowledgement of bias and the use of triangulation of data collection. The beauty of the DWR approach is that with regard to validity, the execution is designed with self-checking capabilities that ensure the development of a correct account of the research activities and hence ensure descriptive validity.

I have worked at ensuring the accuracy of the account by utilising multiple means of data collection to gain an accurate account of the activities. Furthermore, I have ensured that high standards were followed in the collection of data as well as remaining within ethical boundaries.

### **5.10 Conclusion**

Post-colonial countries in the Caribbean have a similar educational heritage and experience and the historical context in which this study was undertaken is an interesting one given that there were deep seated cultural tensions relating to our colonial past. It is my belief that these historical traces still play through the institutions and their work practices and I am of the view that I could have done further work to show how activity theory could be useful in a very complicated cultural historical setting.

Any research is hard work but in the end, it provides a measure of satisfaction to the researcher. I have travelled a path of learning and self-development in the execution of the project and on reflection, I note that there are things I could have done differently given that hind sight is always much clearer. I have grown personally and professionally and my faith in the interventionist developmental research work has been strengthened. I intend to proceed on the new course and engage with Development Word Research in order to assist in the growth and development of my workplace.

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**APPENDIX A - Written correspondence to and from institutions**

**Letter seeking permission to conduct research and replies from institutions.**

23 Atlantic Park  
Belair, St. Philip. BB18075, Barbados  
Email: [edpcscb@bath.ac.uk](mailto:edpcscb@bath.ac.uk), Tel: (246) 266-1978 (C)/423-2500 (H)/246-1920 (W)

May 02, 2008

The Principal  
Barbados Community College  
“Eyrie”  
Howells Cross Roads  
St. Michael  
Barbados

Dear Dr. Best

I am currently conducting a research project in partial fulfilment of the requirements for the Doctor of Education Programme at the University of Bath, England. The project seeks to investigate the sociocultural effects of the proposed University College of Barbados, (UCB) merger on employees of the Erdiston Teachers’ College, The Barbados Community College and the Samuel Jackman Prescod Polytechnic.

The problem under investigation is:

**How and why do formative, historical, social, and cultural factors influence and shape the proposed amalgamation of three tertiary level education institutions in Barbados and to what extent do these issues affect the attitudes the attitudes of the planning office staff towards the merger and contribute to organisational learning?**

I am seeking your permission to administer a questionnaire (sample enclosed) and to conduct interviews with several academic and administrative staff members of your institution. The information collected will be held in the strictest of confidence and will be used only for the purpose of the research project.

Thank you for your support.

Yours respectfully

Chesterfield St. C. Browne  
Research Student Distance  
Department of Education - University of Bath

## BARBADOS COMMUNITY COLLEGE

(Established July 1968)

OFFICE OF THE PRINCIPAL  
PHONE (246) 426-3186

PBX (246) 426-2858  
FAX (246) 429-5935  
E-MAIL [principal@bcc.edu.bb](mailto:principal@bcc.edu.bb)



"Eyrie"  
Howell's Cross  
Road  
St. Michael  
Barbados

*All correspondence should  
be addressed to the Principal*

*Our Ref: P.7/28/08*

9<sup>th</sup> May, 2008

Mr. Chesterfield St. C. Browne  
23 Atlantic Park  
Belair  
St. Philip

Dear Mr. Browne:


I refer to your letter of 2<sup>nd</sup> May, 2008 in which you requested permission to administer a questionnaire and conduct interviews with academic and administrative staff of the College.

I note that this questionnaire is to enable you to complete your research project which is in partial fulfillment of your Doctor of Education programme at the University of Bath, England.

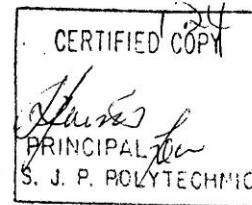
Please be informed that permission is granted for you to administer your questionnaire on condition that the anonymity and confidentiality of individual responses are maintained.

Please accept my best wishes for successful completion of your doctoral programme.

Yours sincerely

  
Gladstone A. Best Ph.D  
Principal

GAB:si



SPP: 21/266/Vol.I/123

May 14, 2008

Mr. Chesterfield Browne  
23 Atlantic Park  
Belair  
ST. PHILIP BB 18075

Dear Mr. Browne

**Ref: Your letter of May 2, 2008 seeking permission to conduct research  
among staff of Samuel Jackman Prescod Polytechnic**

Please be advised that your request in connection with the above captioned research has been granted.

We note that it is part of the requirement for the Doctor of Education Programme of the University of Bath and seeks to investigate certain formative, historical, social and cultural factors which potentially shape the proposed amalgamation of three educational institutions in Barbados.

We wish you success in your studies.

Yours truly

Wendel S. Cozier  
PRINCIPAL (AG.)

WSC/sp

## **APPENDIX B - Questionnaire administered to staff at three institutions**

### **DEPARTMENT OF EDUCATION FACULTY OF HUMANITIES AND SOCIAL SCIENCES UNIVERSITY OF BATH U.K**

#### **QUESTIONNAIRE**

#### **INSTRUCTIONS**

**This questionnaire is designed to canvas your opinion on the matters which you think are important to you in the proposed merger of the Barbados Community College (BCC), Erdiston Teachers' Training College (ETTC) and the Samuel Jackman Prescod Polytechnic (SJPP). Please answer the questions candidly.**

#### **SECTION 1 – Personal Data**

**Please tick answers in this section**

**1.** Place of employment BCC [ ] ETTC [ ] SJPP [ ]

**2.** Male [ ] Female [ ]

**3.** Age 20 – 30 [ ] 31- 40 [ ] 41 – 50 [ ]  
51 – 60 [ ] Over 60 [ ]

**4.** Length of service at the institution ..... years.

**5.** Job classification

Manager [ ] Tutor [ ]  
Instructor [ ] Administrative [ ]  
Other .....

**6.** Highest level of qualification

Doctorate [ ] Diploma [ ]  
BA/BSc [ ] LCGI [ ]  
HND/HNC/OTD [ ] Certificate [ ]  
Masters [ ] Other (Please state) .....

**In the sections below, please circle the response that best reflects your opinion on the issue raised in each question.**

**Response Scale**      **5 – Strongly Agree**      **4 – Agree**      **3 – Undecided**  
                                 **2 – Disagree**      **1 – Strongly disagree**



	<b>SECTION 2 - General views and perceptions</b>					
7.	The merger of three institutions with different emphases is likely to be problematic.	5	4	3	2	1
8.	My institution has been doing well so there is no need to merge.	5	4	3	2	1
9.	The areas of specialty of the three institutions should be kept separate if there is a merger.	5	4	3	2	1
10.	The merger will disadvantage my institution.	5	4	3	2	1
11.	The merger will result in a more bureaucratic institution.	5	4	3	2	1
12.	The vision of the UCB has been clearly articulated.	5	4	3	2	1
13.	The mission of the UCB has been clearly articulated.	5	4	3	2	1
14.	The planners seem aware of the need to develop a change management strategy.	5	4	3	2	1
15.	There is the need to hold more intensive seminars and workshops to prepare staff for the upcoming merger.	5	4	3	2	1
16.	Staff of the three institutions should adopt a “wait and see” attitude to the amalgamation.	5	4	3	2	1
	<b>SECTION 3 – Socio-cultural Issues</b>					
17.	The planning process has the potential to disrupt the smooth day-to-day operations of the three institutions.	5	4	3	2	1
18.	Tensions and conflicts can result from the varied mix of personnel with different educational philosophies, skills and talents that have been developed in different institutional cultures.	5	4	3	2	1
19.	Merging three cultures from institutions with different educational directions will be problematic.	5	4	3	2	1
20.	The development of loyalties to the UCB will be the greatest challenge for staff prior to and during the first year of the UCB.	5	4	3	2	1
21.	The issue of the potential cultural difficulties that may arise from the merger should receive special planning attention prior to the merger.	5	4	3	2	1
22.	The academic staff committees that are planning for the merger are an adequate representation of the academic staff of the three institutions.	5	4	3	2	1
23.	Strong and dynamic leadership is needed to lessen the effects of the clash of cultures after the merger.	5	4	3	2	1
24.	A clear plan has been instituted to handle the management of culture difficulties that are likely to arise.	5	4	3	2	1

25.	Change management programmes for UCB should be carefully crafted and implemented to assist in the building of a new educational and professional community.	5	4	3	2	1
26.	The planners should identify a person to champion the amalgamation.	5	4	3	2	1
	<b>SECTION 4 - Institutional Learning</b>					
27.	A successful merger is possible because of the dynamic mix of personnel with diverse skills, talents, educational philosophies and professional backgrounds in the three institutions.	5	4	3	2	1
28.	The UCB planning office has been working to ensure that I have the necessary tools to cope with the impending change.	5	4	3	2	1
29.	The change management workshops have provided me with tools to cope with changes and adapt to the new UCB environment.	5	4	3	2	1
30.	The staffs of the three institutions have been given the opportunity to learn new ways of collaboration and problem solving as part of the creation of the UCB.	5	4	3	2	1
31.	Write a brief comment on how the staff of the three institutions can benefit by collaborating during the pre-merger period.  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....					

## **APPENDIX C - Form RP1 Document Analysis Worksheet**

(Modified from Document of National Archives and records Administration, USA)

<b>1. TYPE OF DOCUMENT</b>		
Newspaper <input type="checkbox"/>	Map <input type="checkbox"/>	Advertisement <input type="checkbox"/>
Letter <input type="checkbox"/>	Telegram <input type="checkbox"/>	Minutes of meeting <input type="checkbox"/>
Report <input type="checkbox"/>	Memo <input type="checkbox"/>	Other .....

<b>2. DATE OF THE DOCUMENT</b>	
<b>3. CHARACTERISTICS OF THE DOCUMENT</b>	
Letter head/seal <input type="checkbox"/>	Notations <input type="checkbox"/>
Handwritten <input type="checkbox"/>	Typed <input type="checkbox"/>
Other .....	
<b>4. AUTHOR OR CREATOR OF THE DOCUMENT</b>	
POSITION (Title)	
<b>5. AUDIENCE FOR WHOM THE DOUCMENT IS INTENDED</b>	

<b>6. ADDITIONAL DOCUMENT INFORMATION</b>	
A.	Why was the document produced?
B.	List at least three points that are very important as mirror data
D.	Are they any unanswered questions?

<b>7. ADDITIONAL NOTES</b>
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## **APPENDIX D - Form FP2**

Focus Group Planning Document:

### **Problem and Objective**

Investigation of the Planning Office landscape and the issues which the project team feel are important to them as they work in overseeing and implementing shared services at three higher education institutions in Barbados

**Location** - The conference Room of the Higher Educational Development Unit.

**Agreed Starting time:** 10 a.m.

**Estimated length of Session:** 1hr 15 minutes

**Data Capture Method** - Digital Audio Recorder (small, not intrusive or detracting)

### **A. Protocol for conducting the session:**

#### **I. Introductory Phase**

Welcome remarks and make introductions and thank participants for allowing the engagement.

Outline the purpose of the focus group session.

- State the ground rules namely
- Each idea proffered is important and everyone has an opportunity to speak.
- The moderator will facilitate the session and keep focus on the issue at hand
- There is no need to fear participating because there are no right or wrong answers; even comments which may be perceived as negative are important in gaining insight about the topic under discussion.

Emphasise confidentiality - comments and views are confidential and only summarized information will be communicated.

#### **II. Focus Group Activity**

Facilitate the session by guiding participants into the questioning, beginning with a general question first. As participants begin to share ideas, cycle through the group, ensuring that each participant has a chance to be heard. When comments related to one question are finished, summarize them, making sure there is agreement with the summary. Capitalize on unanticipated comments and useful directions the discussion may take. Probe and move flexibly into unplanned aspects of the topic but be careful about unnecessary or irrelevant divergences. The objective is to maintain the focus.

### **III. Conclusion**

Conclude the exercise by allowing each member to make a two minutes final statement about they gathered from the session. Thank participants and remind them how the information will be used and inform to expect follow up summary of the discussion for their comment.

#### **B. Questions administered to the project office focus group**

##### **QUESTION 1**

Merging three institutions that have particular educational emphases and strategic directions is a complex problem. What in your view are the major issues that will arise because of the attempt to merge?

##### **QUESTION 2**

The proposed merger is likely to lead to a clash of cultures. What has HEDU put in place to mitigate the effects of such a clash?

##### **QUESTION 3**

What are the major issues internal or external to the project which are likely to impact on the outcome of the project successful or otherwise?

##### **QUESTION 4**

How do you see the varied mix of personnel, their different educational philosophies, skills and talents impacting on a merger of this sort?

##### **QUESTION 5**

Do you think staff loyalty to their current institution will be a major issue?

##### **QUESTION 6**

How important is community building in the creation of UCB loyalty for the current process?

##### **QUESTION 7**

The staff of BCC, SJPP and Erdiston needs “tools” (mental, psychological and physical to assist them in coping with the impending change. What in your view are some of the critical tools that will be needed by staff of institutions?

##### **QUESTION 8**

How important is the idea of collaboration between the three institutions at this stage?

**QUESTION 9**

What are the possible results (or benefits) of collaboration among all parties at this stage of the merger?

**QUESTION 10**

How critical is the process of change management to the planning and execution of the merger, and what does HEDU hope to achieve through the change management?

**QUESTION 11**

Do you think that the staff of the three institutions has a clear understanding of (a) the vision and (b) the mission of the new UCB?

**QUESTION 12**

What in your view are the critical success factors that are needed for the merger?

## **APPENDIX E - Questions administered to the principals**

### **QUESTION 1**

Merging three institutions that have particular educational emphases and strategic directions is a complex problem. What in your view are the major issues that will arise as a result of the attempt to merge?

### **QUESTION 2**

The proposed merger is likely to lead to a clash of cultures. In your opinion, has UCB/HEDU put in place any programmes to mitigate the effects of such a clash?

### **QUESTION 3**

From your viewpoint what are the major issues internal or external to the project that are likely to impact on the outcome of the project successful or otherwise?

### **QUESTION 4**

How do you see the varied mix of personnel, their different educational philosophies, skills and talents impacting on a merger of this sort?

### **QUESTION 5**

Do you think staff loyalty to their current institution will be a major issue?

### **QUESTION 6**

How important is community building (building of institutional relationships) in the creation of UCB loyalty for the current process?

### **QUESTION 7**

The staff of BCC, SJPP and Erdiston needs “tools” (mental, psychological and physical to assist them in coping with the impending change. What in your view are some of the critical tools that will be needed by staff of institutions?

### **QUESTION 8**

How important is the idea of collaboration between the three institutions prior to the merger?

**QUESTION 9**

What are the possible results (or benefits) of collaboration among all parties at this stage of the planning process?

**QUESTION 10**

How critical is the process of change management to the planning and execution of the merger. Do you think that UCBPO/HEDU has given enough attention to the issue?

**QUESTION 11**

Do think that UCBPO/HEDU has clearly articulated (a) the vision and (b) the mission of the new UCB?

**QUESTION 12**

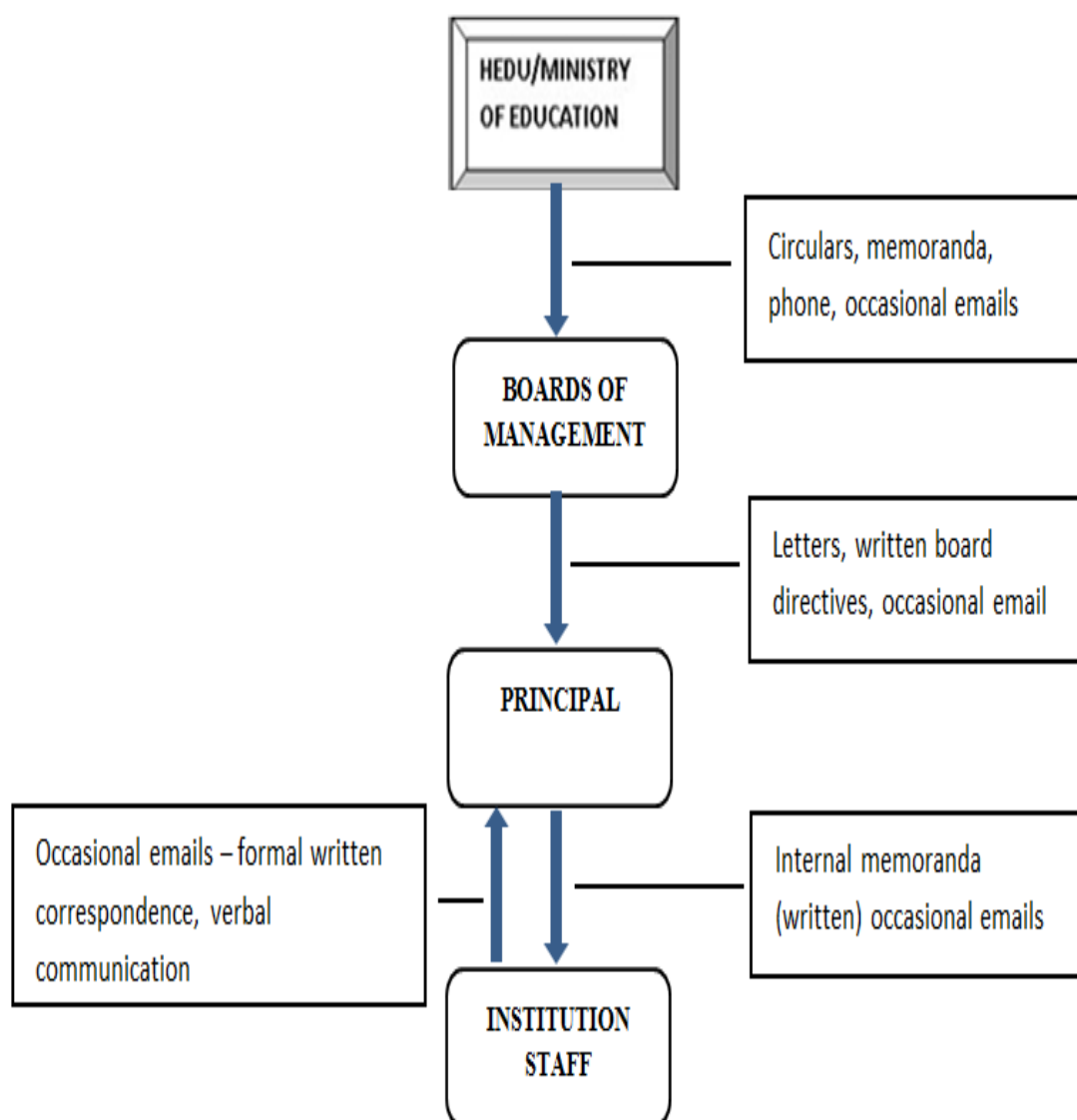
What in your view are the critical factors that will determine the successful outcome of the planned merger?

**QUESTION 13**

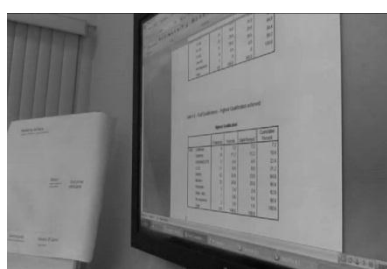
From where you sit, do you think that there is a communication channel for staff at the operational levels to make their views known to UCBPO/HEDU?



**APPENDIX F - Conceptual tool used in the development of the new communication model**



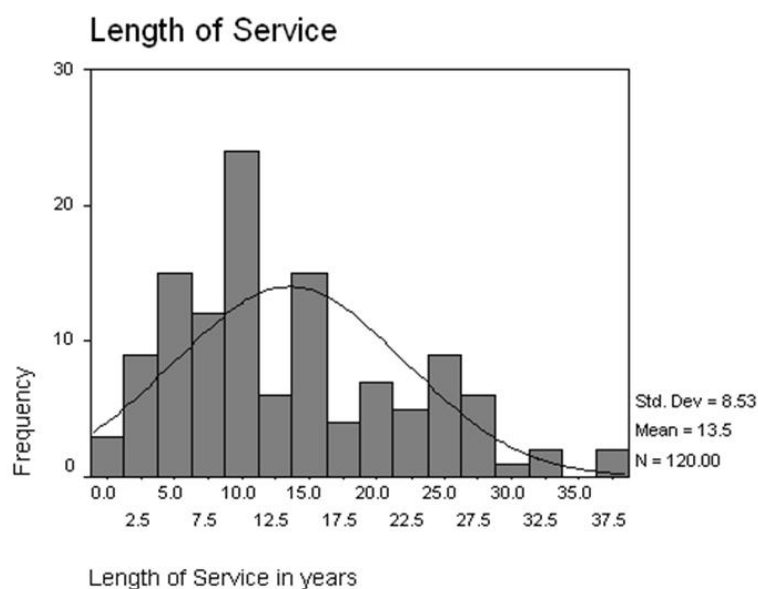
## **APPENDIX G - Photos taken during Change Labs**



## APPENDIX H - Survey data that was used to create the mirror

**Table H.1** Number of Questionnaire returns by institutions

INSTITUTIONS	QUESTIONNAIRES DISTRUBUTED	QUESTIONNAIRES RETURNED	PERCENTAGE RETURNS
<b>SJPP</b>	100	69	69%
<b>ERDISTON</b>	25	19	76%
<b>BCC</b>	60	36	61%



**Figure H.1** Graph showing length of service of respondents

**Table H.2** Result by theme – communications

THEME – COMMUNICATION			
<b>ITEM</b>	<b>A clear vision has been expressed for the UCB</b>		
	<b>AGREEMENT</b>	<b>NEUTRAL</b>	<b>DISAGREEMENT</b>
	17.4%	23.3%	59.2%
<b>ITEM</b>	<b>A clear mission has been expressed for the UCB</b>		
	<b>AGREEMENT</b>	<b>NEUTRAL</b>	<b>DISAGREEMENT</b>
	17.4%	26.2%	56.4%

**Table H.3 Result by theme – tensions and conflict**

THEME - TENSIONS AND CONFLICT			
ITEM	The merger is likely to be problematic		
	AGREEMENT	NEUTRAL	DISAGREEMENT
	67%	16.5%	16.5%
ITEM	Problems will occur because of the merging of three different institutional cultures		
	AGREEMENT	NEUTRAL	DISAGREEMENT
	67.9%	17.5%	14.5%
ITEM	Tensions and conflicts will result from the varied mix of personnel		
	AGREEMENT	NEUTRAL	DISAGREEMENT
	67.0%	16.5%	16.5%
ITEM	Planning for the merger will disrupt the day-to-day activities of the institutions		
	AGREEMENT	NEUTRAL	DISAGREEMENT
	63.1%	16.5%	20.4%

**Table H.4 Result by theme – personal learning**

THEME - PERSONAL LEARNING			
ITEM	I am learning new ways to collaborate and to solve problems		
	AGREEMENT	NEUTRAL	DISAGREEMENT
	11.6%	21.4%	66.9%

**Table H.5 Result by theme – Change management**

<b>THEME - CHANGE MANAGEMENT</b>			
<b>ITEM</b>	<b>A Change Management program is needed to build new educational and professional community</b>		
	<b>AGREEMENT</b>	<b>NEUTRAL</b>	<b>DISAGREEMENT</b>
	87.4%	9.7%	2.9%
<b>ITEM</b>	<b>A clear plan for dealing with the potential problem of cultural issues is needed</b>		
	<b>AGREEMENT</b>	<b>NEUTRAL</b>	<b>DISAGREEMENT</b>
	10.7%	37.9%	51.5%
<b>ITEM</b>	<b>A UCB champion should be identified</b>		
	<b>AGREEMENT</b>	<b>NEUTRAL</b>	<b>DISAGREEMENT</b>
	28.2%	36.9%	34.9%

**Table I.6 Result by theme – Mediation by tools**

<b>THEME - MEDIATION BY TOOLS</b>			
<b>ITEM</b>	<b>UCB planning office is helping staff to develop coping tools</b>		
	<b>AGREEMENT</b>	<b>NEUTRAL</b>	<b>DISAGREEMENT</b>
	14.6%	31.1%	54.3%
<b>ITEM</b>	<b>The Change Management workshop(s) has/have provided me with coping tools</b>		
	<b>AGREEMENT</b>	<b>NEUTRAL</b>	<b>DISAGREEMENT</b>
	14.6%	29.1%	58.3%

## APPENDIX I - Extracts of analysis in NVIVO 8

The screenshot shows the NVivo 8 interface with a search for the node 'Communication'. The left sidebar shows the 'Nodes' list with 'Communication' selected. The main window displays a table of search results for 'Communication' under the 'All Nodes' tab. The table has columns: Name, In Folder, Created On, Created By, Modified On, and Modified By. The results show 'Communication' in the 'Free Nodes' folder, created on 7/19/2010 12:14 PM by CSB, and modified on 7/19/2010 2:03 PM by CSB. Below the table, a detailed view of the 'Communication' node is shown, displaying a list of references with their coverage percentages. The references are:

Reference	Coverage
Reference 1	0.65%
Reference 2	0.18%
Reference 3	0.97%
Reference 4	0.13%

The text for Reference 1 is: "I think that I now want to drift away and get into another question on that we have not gotten to yet. That was ..... communication but I don't think that people had a clear spin of what UCB was going to be as an institution, what its strategy what its direction was.. what its focus was going to be".

The screenshot shows the NVivo 8 interface with a search for the node 'Vision and Mission'. The left sidebar shows the 'Nodes' list with 'Vision and Mission' selected. The main window displays a table of search results for 'Vision and Mission' under the 'All Nodes' tab. The table has columns: Name, In Folder, Created On, Created By, Modified On, and Modified By. The results show 'Vision and Mission' in the 'Free Nodes' folder, created on 7/19/2010 11:32 AM by CSB, and modified on 8/7/2010 10:39 AM by CSB. Below the table, a detailed view of the 'Vision and Mission' node is shown, displaying a list of references with their coverage percentages. The references are:

Reference	Coverage
Reference 1	0.31%
Reference 2	1.69%

The text for Reference 1 is: "Communication has not been our strong point so if we are not communicating what the vision and the mission are they going to know about".

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Name	Nodes	References	Created On	Created By	Modified On	Modified By
Dr. Rowe	13	23	7/24/2008 8:2	CB	7/19/2010 2:49 PM	CSB
Interview w	12	22	5/24/2009 10:	CB	8/7/2010 10:40 AM	CSB
Interview D	11	17	7/20/2010 11:	CSB	7/21/2010 10:14 AM	CSB
Interview w	6	10	5/24/2009 10:	CB	7/19/2010 11:33 AM	CSB

HEDU focus group session Dr. Rowe Interview with Headley Interview Dr. Best Interview with Wendel Cozier

### Q13 Mission and Vision

*When all is said and done, do you think that the staff of the three institutions have a clear understanding of (a) your vision and (b) the mission of the new UCB?*

I think that what I alluded to earlier is one of the things that I would change moving forward and it has to do with moving forward. That vision can as wonderful as sliced bread and cheese but if you don't clearly represent it to all of the stakeholders so that they can see what are the benefits, see where they are going, see how it can impact everybody. You "ain't doing nothing" because you are operating in a vacuum. The other thing is any time you develop a mission and people don't feel like can collectively buy into that mission, it is difficult to sell it to them after the fact. I think that those persons with whom you can sit down and have a conversation about the project will see the vision and mission easily. Well the vision actually, the mission is greater buy-in process but standing up in front of 150 people in a staff meeting and answering questions that are being tossed left and right that quick easy ....kind of thing is a lot more difficult but I think that if you can really sell the vision appropriately, people will buy into it. Right now, I think we are probably at 50/50 those persons who have been engaged the most are

CSB 4 Items Nodes: 13 References: 23 Editable Line: 319 Column: 75

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Name	Nodes	References	Created On	Created By	Modified On	Modified By
Staff Questionnaire Analysis	0	0	4/28/2009	CB	5/24/2009 10:11	CB
Very early analysis	0	0	4/28/2009	CB	4/28/2009 9:40 P	CB
Thoughts about the study	0	0	4/28/2009	CB	4/28/2009 9:40 P	CB
The data collection exercise for the questionn	0	0	4/28/2009	CB	4/28/2009 9:39 P	CB

HEDU focus group session Dr. Rowe Interview with Headley Interview Dr. Best Interview with Wendel Cozier Staff Questionnaire Analysis Very early analysis

Emerging issues arising from questionnaires and interview(s)-

- Leadership
- Cultural Difficulties – tensions and conflict
- Tools and tool creation
- Vision and Mission
- Change and change management strategies
- Planning for success
- Communication

CSB 4 Items